

## THE DIPTERA OF THE TERRITORY OF NEW GUINEA. XI.

## FAMILY TRYPETIDAE.

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*(Communicated by Frank H. Taylor, F.R.E.S., F.Z.S.)*

(Plate xi; fifteen Text-figures.)

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In this paper I present a review of this family on the basis of materials in hand, the Australian species available to me, and the rather sparse literature of the New Guinea region. I make no attempt to deal with the many Australian species of the genus *Dacus*, sens. lat., but I present records of the few species of the group now before me.

Below I give a synopsis of the various groups reviewed in the paper. While in the main this will apply to the family in other faunal regions, there are several segregates not represented in this region, and in its circumscribed form a strict application of the synopsis will undoubtedly result in misleading associations of some extralimital genera or species if applied to the latter. I have included certain extralimital genera in my keys merely for comparative purposes or because it appears to me that they may yet be found in this region.

I have to thank Mr. Frank H. Taylor for his kindness in supplying me with most of the materials dealt with and for undertaking the final preparation of the manuscript and making most of the figures to illustrate the paper. A few species I have had the opportunity of examining in the collection of the United States National Museum, the wing of one type-specimen being figured for me by Mr. C. T. Greene of that Institution. Some of the specimens belong to me; I have also had the opportunity of including in this report data derived from a study of specimens, belonging to the Imperial Institute of Entomology, taken in the Solomon Islands, these latter forming the basis for a separate paper.

*Key to the Subfamilies.*

1. Ocellar and postvertical bristles almost invariably lacking, rarely represented by microscopic hairs, the postocular cilia short, almost undeveloped; thorax without the presutural, dorsocentral, and sternopleural bristles, humeral present in only one or two species; antennae slender, the third segment rarely less than three times as long as wide ..... *Dacinae*
- Some or all of the above bristles present on head and thorax, postocular cilia always distinct; third antennal segment usually distinctly less than three times as long as wide ..... 2
2. Costa of the wing with a deep cleft at apex of the subcostal vein, the costa with a definite angle at anterior side of the cleft and at tip of the angle with a pair of well-developed bristles; genus from this region with a pair of long strong erect bristles in front of the ocelli on the interfrontalia ..... *Schistopterinae*
- Costa of the wing with no, or a hardly perceptible, break at apex of the subcostal vein, with or without a pair of bristles at that point; no genus with a pair of long strong erect bristles in front of the ocelli on the interfrontalia ..... 3

3. Postocular cilia black or dark brown, fine at tips; scutellum with from two to ten marginal bristles; sixth abdominal tergite of the female usually distinctly shorter or at least not longer than the fifth ..... Trypetinae  
 Postocular cilia yellow or yellowish-white, stout and rather blunt at apices; scutellum with two or four bristles on margin; sixth abdominal tergite of female usually longer than fifth ..... Tephritinae

#### Subfamily DACINAE.

I include two tribes in this subfamily, but Adraminii has sometimes been given subfamily rank. The two tribes may be distinguished as below.

- A. Posterior basal cell of the wing much wider than the anal cell, the vein on its anterior side much curved up at its base so that the cell is almost as wide at its base as at its apex; lobe of the anal cell usually longer than the free part of the anal vein; pleurotergite without fine erect hairs ..... Dacinii  
 AA. Posterior basal cell of the wing not, or very little, wider than the anal cell, the vein on its anterior side not noticeably curved forward at its base; lobe of the anal cell not nearly as long as the free part of the anal vein; pleurotergite almost invariably with erect hairs on part of its surface ..... Adraminii

#### Tribe DACINI.

I am not dealing in a complete manner with this tribe as there are so few species in the New Guinea material before me. The few that are in the collection include representatives of four subgenera: *Callantra* Walker, *Chaetodacus* Bezzi, *Zeugodacus* Shiraki, and *Bactrocera* Guérin. Of these the first listed has been considered as a genus by Hendel, but an intensive study of all the species from all the faunal regions where the genus *Dacus*, sens. lat., occurs is essential to a definite conclusion on the matter of generic and subgeneric segregations and this I am not prepared to make at this time. I present below a key to the species now available, with a full realization of the fact that there must be many more species in New Guinea that are unrepresented in this collection.

#### Key to the New Guinea Species.

1. Abdomen elongated, with a slender basal petiole which has a short pointed tubercle on each lateral basal angle, the apical bulbous portion of the abdomen in the female prominently convex; wing with a broad dark-brown costal border that extends to, or almost to, the fourth vein on its entire extent; scutellum short, broadly rounded in outline, with two bristles (*Callantra* Walker) .....  
 ..... *smicroides* Walker  
 Abdomen not elongate, more or less ovate, not petiolate, without distinct tubercles at lateral basal angles on composite basal tergite, and only moderately convex on apical half in both sexes; wing with a much narrower costal brown stripe, or, if with a broad stripe, then with two or three brown fasciae on the disc; scutellum more elongate and not evenly rounded in outline ..... 2  
 2. Scutellum with four marginal bristles (*Zeugodacus* Shiraki) ..... 3  
 Scutellum with but two marginal bristles ..... 4  
 3. Prescutellar acrostichal and supra-alar bristles lacking ..... *cucumis* French  
 Prescutellar acrostichal and supra-alar bristles present ..... *papuaensis*, n. sp.  
 4. Wing with a broad dark-brown costal stripe that extends to third vein and from which emanate three dark-brown fasciae, the basal one connecting with the anal stripe, the second covering the cross-veins, and the third, which is usually incomplete behind, lying between the outer cross-vein and the wing tip; prescutellar acrostichals present; humeri and posterior notopleural calli orange-yellow (*Bactrocera* Guérin) ..... *umbrosus* (Fabricius)  
 Wing with a narrow dark brown stripe on the costal margin that does not extend to third vein, and the field of the wing without dark fasciae beyond the anal stripe (*Chaetodacus* Bezzi) ..... 5  
 5. Prescutellar acrostichal bristles present; humeri and posterior notopleural calli orange-yellow; outer cross-vein not clouded with brown ..... *froggatti* Bezzi  
 Prescutellar acrostichals lacking; lateral margins of the mesonotum from anterior margin of humeri to wing bases ivory-white; outer cross-vein of the wing narrowly clouded with brown ..... *albolateralis*, n. sp.

## DACUS (CALLANTRA) SMIEROIDES (Walker).

*Jour. Proc. Linn. Soc. Lond.*, iv, 1860, 154.

The genus *Callantra* was erected by Walker for the reception of this species. Hendel has since placed in it another species, from New Britain, which I have not seen. *Dacus aequalis* Coquillett, from Australia, also belongs to the group. The Australian species *Dacus bryoniae* Tryon may belong here also, but the petiole of the abdomen is not so long, and the dark-brown costal stripe is narrower than in the other species.

Head brownish-yellow, the face with an elongate black spot in lower third of each antennal fovea; third antennal segment almost entirely brownish-black. Frons subquadrate, a little more than one-third of the head-width, with two pairs of incurved infraorbital and one pair of stronger reclinate supraorbital bristles; verticals four, strong. Antennae long, geniculated at apex of first segment, the apical two segments pendulous, basal segment slightly shorter than second, the latter about one-third as long as third; arista bare, a little longer than third antennal segment. Gena narrow.

Thorax brownish-black, nearly all parts closely and minutely piliferous punctate, but slightly shiny, humeri yellowish, a yellow streak on hind margin of each mesopleuron that extends along the transverse suture on the mesonotum, but they do not entirely meet in centre; another elongate yellow spot on the pleurotergite, and the apical two-thirds of the scutellum yellow. The bristles all weak, as follows: 2 notopleurals, 1 supra-alar, 2 postalars, 1 mesopleural, one very fine short pteropleural, and 2 stronger scutellars. Mesonotal hairs short and mainly yellow, those on scutellum similar.

Legs blackish-brown, tarsi yellow, apices of femora paler brown.

Wing greyish-hyaline, with a broad dark-brown costal stripe that extends over the third vein on its entire extent but does not reach fourth except in basal third of the anterior basal cell, fading out about middle of that cell apically and the middle of the first posterior cell; anal streak paler brown, entire. Inner cross-vein about one-third from apex of the discal cell; outer cross-vein slightly curved, sloping outward above; lobe of anal cell almost twice as long as free part of anal vein. Halteres yellow.

Abdomen coloured as thorax, with a central transverse yellow line at middle and another at apex of the composite basal tergite or petiole, the latter not extending to apical lateral angles, no yellow colour on sides; surface of the remaining tergites in poor shape in the specimen before me because of dust, but apparently there is a large yellowish mark in centre of apex of the penultimate tergite, on which mark the hairs are orange-yellow, and the large oval depression on each side of the ultimate tergite is greyish-dusted. The composite basal tergite is narrower on basal half than in *aequalis*, more distinctly constricted at middle where the yellow transverse line is, and the apical half forms the base of the large, oval, prominently convex remainder of the abdomen, which is pear-shaped when seen from above, and straight on ventral edge when seen in profile; sheath of ovipositor narrowly conical, not at all depressed, with more and longer hairs than in *aequalis*, and these black and not yellowish in colour.

Length, 9 mm.

Originally described from Celebes. The specimen before me is from Dutch New Guinea, Lake Sentani, Iffar, August 1936 (L. E. Cheesman). In British Museum.

I have compared the specimen with the type-specimen of *Dacus aequalis* Coquillett in the United States National Museum to obtain the above comparative data. In a paper on the Trypetidae of the Solomon Islands now in the press I have included a key to all the species of this subgenus.

DACUS (BACTROCERA) UMBROSUS Fabricius.

*Syst. Anthiat.*, 1805, 274.

This species and several others closely related to it have been placed in the subgenus *Bactrocera* Guérin, but there are no outstanding characters beyond the two or more oblique dark-brown fasciae on the field of the wing to separate it from *Dacus*, sens. lat.

This species extends in range from the Malayan region to Australia. I have before me specimens taken by Mr. Taylor at Wewak, New Guinea, Rabaul, and Lindenhafen, New Britain.

DACUS (ZEUGODACUS) CUCUMIS French.

*Dacus tryoni* var. *cucumis* French, *Jour. Dept. Agric. Vict.*, v, 1907, 307.—*D. cucumis* French, Tryon, *Proc. Roy. Soc. Qsld.*, xxxviii, 1927, 207.

One female, Papua: Mondo, 5,000 feet, i-ii, 1934 (L. E. Cheesman). British Museum. Previously recorded from New South Wales and Queensland.

DACUS (ZEUGODACUS) PAPUAENSIS, n. sp.

♂, ♀. A rather small orange-yellow species, with the usual two black spots on the face, the thoracic dorsum not blackened, with three ivory-white vittae behind the suture, and the abdomen without black markings though the base of the composite basal tergite is browned. Wing with a very narrow dark-brown costal stripe to apex of third vein or slightly beyond that, the costal cells hyaline; anal streak present.

Frons in male a little more than twice as long as wide, with three pairs of incurved infraorbital and one pair of supraorbital bristles, in female wider and with two or three pairs of infraorbitals; both sexes with four strong verticals. Third antennal segment about three times as long as second.

Thorax with mesonotum slightly browned along inner edges of the postsutural yellow vittae, the following parts lemon-yellow: Humeri, posterior notopleural calli, three postsutural vittae, the central one not attaining posterior margin, the entire scutellum, posterior half of the mesopleura, but little narrowed below, a large double spot on the pleurotergite; postnotum black-brown. Scapular bristles quite strong; in the male there is a dark hair-like setula or bristle near the hind edge of each humerus, but in the female this is not distinctly evident. Supra-alar and prescutellar acrostichal bristles present; scutellars four.

Legs yellow.

Wing as Plate xi, figure 1, the costal cells hyaline, and the dark-brown costal streak ending just beyond the apex of third vein. First and third veins setulose as usual, the fifth vein bare; free part of anal vein in both sexes nearly as long as the lobe. Anal streak broad to near apex of lobe of anal cell, faint beyond it.

Abdomen ovate, no visible erect fringe of third abdominal tergite of the male, the depressions on fifth tergite of that sex poorly developed, the fifth tergite of female very distinctly depressed centrally on each side. Hairs pale brown.

Length, 7-8 mm.

Type, male, Bulolo, New Guinea (F. H. Taylor). Allotype, Wewak, New Guinea (J. R. Rigby).

## DACUS (CHAETODACUS) FROGGATTI Bezzi.

*Dacus zonatus* Froggatt, nec Saunders, PROC. LINN. SOC. N.S.W., xxxv, 1910, 868.—*D. froggatti* Bezzi, n.n., Dipt. of Fiji, 1928, 101.

One male, Lindenhafen, New Britain (F. H. Taylor). Originally described from Russell Island.

## DACUS (CHAETODACUS) ALBOLATERALIS, n. sp.

♂, ♀. A brownish-yellow species, much like *papuaensis* in general colour and markings, the mesonotum with three ivory-white postsutural vittae; along the inner edge of the sublateral pair there is a blackish line. The mesonotum differs from that of any of the other species listed in this paper in having the entire lateral edges in front of the wing bases ivory-white, and in having also a pair of yellowish-grey-dusted vittae extending from the anterior margin to near the posterior margin between the postsutural vittae.

Head brownish-yellow, paler in front, the face with the usual pair of glossy black spots in the foveae. Third antennal segment about 2.5 times as long as second. Frons with two pairs of incurved infraorbital and one pair of reclinate supraorbital bristles, and four strong verticals; ocellar spot black.

Legs yellow, normal in structure and armature.

Wing as Plate xi, figure 2, the costal streak dark brown, not extending over second vein on to the field, ending near middle of apex of the first posterior cell; inner cross-vein not clouded, outer cross-vein distinctly but narrowly clouded with brown. First and third veins setulose as usual, fifth vein bare.

Abdomen elongate-ovate, brownish-yellow, with rather dense concolorous hairs, the apical lateral erect fringe on third tergite of male dark brown. Male with a central apical dark mark on the fourth and fifth tergites.

Length, 7-7.5 mm.

Type, female, Upper Watut, New Guinea (F. H. Taylor). Allotype, Papua: Mondo, 5,000 feet, i-ii, 1934 (L. E. Cheesman). Type returned to Mr. Taylor, allotype in collection of British Museum.

## Tribe ADRAMINI.

I have some doubts about the propriety of segregating this group on the basis of the cited characters, as there appears to me to be a great similarity between them and those genera most closely allied to *Euphranta* Loew. This latter group has consistently been well removed from *Adrama* and its allies by specialists on the Trypetidae, but by making use of other characters than have been used for group segregations it might be possible to bring these two groups together.

The haired pleurotergite is present in *Adrama* and in *Euphranta*, as well as in a number of related genera, and there is a great similarity in the general habitus as well as in the wing-markings of most of the genera involved. The lack of the presutural bristle is to my mind rather an important character that links all of them together, and it appears to me to be of more significance than the previously used character of the spinose femora, there being other genera in which this last-mentioned character occurs that are not at all closely related to *Adrama*.

As this is purely a faunal paper and not intended as a revisional one, I prefer to leave some matters, such as this, in abeyance meanwhile, or to other and better informed workers on the family.

Below I present a key to the genera of this group known to me, though one of them is so known from the descriptions and figures only. Two of the genera are not known to occur in New Guinea, but *Neosiphira* does occur in Celebes and it may yet be found there.

*Key to the Genera.*

1. At least the mid and hind femora with short stout ventral spines apically, usually in two series; marginal cell of the wing just beyond the apex of the first vein at least twice as wide as the submarginal cell at the same point; subcostal vein rectangularly bent forward near tip, obsolescent beyond the angle; stigma not half as long as the costal division in front of it; stem vein of the wing with short stiff setulae above to near its extreme base ..... *Adrama* Walker
- None of the femora spinose on their ventral surfaces; marginal and submarginal cells of the wing just beyond apex of first vein subequal in width; subcostal vein sloping forward at apex, rather faint beyond the curve; stigma much more than half as long as the division of costa before it; none, or very few, setulae on the upperside of the stem-vein of the wing basad of the level of the humeral cross-vein ..... 2
2. Apical section of the fourth wing-vein more or less undulated and bent forward at apex so that the first posterior cell is narrowed apically .... *Ncosophira* Hendel
- Apical section of the fourth wing-vein straight or almost so, the first posterior cell not at all narrowed apically ..... 3
3. A pair of fine erect bristles in centre of anterior margin of the mesonotum (central scapular pair) the apices of which are fine and slightly curled; second wing-vein undulated; section of fifth vein basad of the base of the discal cell not longer than the cross-vein closing the latter; vein closing the anal cell slightly angled below the middle, posterior lower angle of that cell hardly produced, the cell much longer than the free part of the anal vein; pleurotergite bare ..... *Pseudosophira*, n. gen.
- No fine erect bristles in centre of anterior margin of the mesonotum; second wing-vein straight; section of the fifth vein basad of the discal cell about twice as long as the cross-vein closing base of latter; vein closing anal cell much angulated at or above middle, the cell with a slender subtriangular lobe at lower posterior angle, not nearly as long as the free part of the anal vein; pleurotergite haired ..... *Cyclopsia*, n. gen.\*

## NEOSOPHIRA Hendel.

*Abhandl. Zool.-Bot. Ges. Wien.*, viii, 1914, 138; *Wien. Ent. Zeitg.*, xxxiii, 1914, 73.

Originally Hendel placed this genus in the family Otitidae (Ortalidae), subfamily Platystominae, but in the same year, as cited above, he included it in his key to the genera of the family Trypetidae. I have not seen either of the two species he placed in the genus, but there can be no doubt about the correctness of his later decision.

From Hendel's description and figures of the genotype, *distorta* Walker, I draw the following data: The frons has one upper reclinate pair of orbitals and a very weak incurved pair of infraorbitals, and one strong pair of verticals; the arista is moderately long haired; mesonotum with 2 notopleural and 2 supra-alar (postalar?) bristles, the other bristles lacking; scutellum with four marginal bristles. Stigma of wing as long as the costal division before it and much longer than the one between it and the apex of second vein; inner cross-vein beyond middle of discal cell.

## NEOSOPHIRA DISTORTA (Walker).

*Trans. Ent. Soc. Lond.*, iv, n.s., 1857, 230 (*Sophira*). Originally described from Celebes. May be found in New Guinea.

## PSEUDOSOPHIRA, n. gen.

The essential characters of this genus may be derived from the features given in the foregoing keys to tribes and genera. As the genus is extralimital, all the known species being from the Philippines, it appears essential to describe only the genotype in order to establish the validity of the genus. This I take the opportunity of doing herein.

\* See under Trypetinae, Group III.

PSEUDOSOPHIRA BAKERI, n. sp.

♂. General colour orange-yellow to ferruginous, shiny, frons dull, upper orbits and vertex glossy. Frons with a large pear-shaped black mark, the narrow end of which is on vertex, the other at anterior third of the interfrontalia; face black centrally, the mark widened from between antennae to epistome. Second antennal segment largely black, third bright orange-yellow, barely twice as long as wide, rounded at apex; arista with the longest upper hairs longer than the width of third antennal segment; palpi yellow. Head slightly wider than thorax, frons one-third of the head-width and about 1.25 times as long as wide, parallel-sided; upper orbits well defined, extending to middle, with a short fine yellow bristle at lower extremity, one pair of fine erect infraorbitals only and these near anterior margin; only the inner verticals present, strong and straight. Eye higher than long, more narrowed below than above; gena narrow.

Thorax with three deep black spots on each lateral margin of the mesonotum as follows: One above humerus, one behind humerus, and a very small one against the hind side of the suture; pleura with a large glossy black spot on upper posterior angle; postnotum immaculate. The single, central, pair of scapulars long, luteous; anterior notopleural lacking, posterior one strong; posterior postalar much shorter than the anterior, which latter is equal to the supra-alar; prescutellar acrostichals minute; scutellum with four strong bristles and many short stiff hairs; pleura without bristles; pleurotergite without erect hairs.

Legs orange-yellow, hind tibiae browned centrally. Fore femur with a series of fine yellow bristles that begins at base rather long and runs out about middle with very short hairs. Mid tibia with a strong black apical ventral spur.

Wing (Pl. xi, fig. 3)\* as in *Colobostrella ruficauda* Hendel, but the hyaline streak between the cross-veins attains the costa, there is a hyaline marginal streak from the apex of the second to beyond the apex of fourth vein, and the hyaline spot is in the second posterior cell, not near the apex of first.

Abdomen glossy ferruginous yellow, the hairs concolorous.

Length, 8.5 mm.

Type, Kolambugan, Mindanao, Philippine Islands. Sent to me a number of years ago by C. F. Baker when I planned a review of the Trypetidae of the Philippines.

Subfamily TRYPETINAE.

Key to the Groups.

1. Arista plumose, or long-haired, the longest hairs rarely (*Acanthocera*) less than half as long as the width of third antennal segment; scutellum with six marginal bristles, the intermediate pair sometimes very short ..... Group I
- Arista much shorter haired; if plumose then the scutellum has but four marginal bristles ..... 2
2. Scutellum flattened, coarsely haired on its entire surface, and with eight or more strong but unequal marginal bristles; hairs on upperside of the first wing-vein carried almost to the base ..... Group II
- Scutellum with but four marginal bristles, rarely with two ..... Group III

GROUP I.

In this group there are three genera, in which the dorsocentral pair of bristles are almost in line with, or even in front of, the transverse line between the supra-alar pair. Of these but one, *Diarrhegmoides*, is in the present collection. The others are Malayan, but may yet be found in New Guinea or adjacent island groups.

\* The tiny spots all over the wing are dirt adhering to the wing membrane.—F.H.T.

## Key to the Genera.

1. Second wing-vein conspicuously undulated beyond level of apex of first vein; petiole of second and third wing-veins sometimes setulose above; dorsocentral pair of bristles well behind the supra-alar line; anterior supraorbital sometimes near anterior fourth of frons ..... 2
- Second wing-vein at most but slightly bent beyond level of apex of first vein; if it is so, then the fifth vein and the petiole of second and third veins are bare above, the face is noticeably convex, the anterior supraorbital is above middle of frons; or the dorsocentral pair of bristles is close to, or in front of, the supra-alar line ..... 6
2. Second wing-vein with several short spur-veins at right angles to it on each side that frequently connect with the first or third veins; fourth vein conspicuously bent forward beyond middle of its apical section so that the first posterior cell is very much narrowed in apex of wing ..... *Polyara* Walker
- Second wing-vein without any, or but one, short spur-vein; if the latter it is near apex on the posterior side and it does not connect with the third vein ..... 3
3. Fourth wing-vein bent forward at its apex so that the first posterior cell is narrowed in the wing tip; only one pair of infraorbital bristles present ..... *Colobostroter* Enderlein\*
- Fourth wing-vein not noticeably bent forward at its apex ..... 4
4. Face in profile strongly convex, receding below; antennae not half as long as face; anterior pair of supraorbital bristles very strong, situated at about the anterior fourth of frons; two supra-alar, two postalar, and six equally strong scutellar bristles present; fifth wing-vein bare above; undulation of second wing-vein not very marked ..... *Themaroides* Hendel
- Face not at all convex in profile; anterior pair of supraorbital bristles at or above middle of frons ..... 5
5. Second wing-vein with a deep downward loop below apex of first; gena about three-fourths as high as eye (Fiji) ..... *Enicopterygia* Malloch
- Second wing-vein merely undulated, not looped; gena not more than one-fourth as high as eye ..... 5a
- 5a. Face vertical, epistome not projecting; antennae not half as long as face; ocellars about as long as the postverticals; petiole of second and third wing-veins not setulose above ..... *Pseudacanthoneura*, n. gen.
- Face slightly concave centrally in profile, the epistome slightly projecting; antennae descending to distinctly below middle of face in profile; ocellar bristles represented by microscopic hairs ..... 5b
- 5b. One pair of infraorbital bristles present; intermediate pair of scutellar bristles very short; petiole of second and third veins bare (Malayan) ..... *Themara* Walker
- At least two pairs of infraorbital bristles present; all three pairs of scutellars long and strong; petiole of second and third veins setulose above ..... *Neothemara* Malloch
6. First, third, and fifth veins setulose on at least a part of their upperside ..... 7
- Only the first and third wing-veins partly setulose above ..... 11
7. First wing-vein exceptionally long, ending in the costal vein above level of upper extremity of the outer cross-vein, the distance between its apex and that of the subcostal vein more than twice as great as that between latter and the humeral cross-vein; face with a central vertical rounded keel, narrowed above and not continued between bases of the antennae; genae and lower occiput with numerous rather long black bristly hairs; sternopleural bristle lacking ..... *Cheesmanomyia*, n. gen.
- First wing-vein not exceptionally long, ending in the costal vein well before level of upper extremity of the outer cross-vein, the distance between its apex and that of the subcostal vein not greater than that between the latter and the humeral cross-vein; face not markedly keeled; gena with a few bristly hairs; sternopleural bristle present ..... 8

\* This genus has but four marginal scutellar bristles, though Enderlein states that it has six. I include it in Groups I and II.



8. Face quite prominently convex in profile, highest at centre, and from there receding to epistome; vertex sharply carinate, the carina projecting behind; antennae about half as long as face; mid tibia with no ventral submedian bristles and with two equally long and strong apical ventral spurs; scutellum bare on disc  
 Face either almost flat and vertical, or, if slightly convex, not receding from middle to epistome; vertex not sharply carinate; mid tibia either with one long and one or more much shorter apical spurs or with a submedian ventral bristle . . . 9  
*Rabaulia* Malloch
9. Antennae not half as long as face, the latter convex and more or less receding below; anterior orbitals very strong, curved backward; hind tibia with two or three submedian anteroventral bristles and the usual series of short anterodorsal setulae; pteropleural bristle present; scutellum with the entire disc covered with stiff hairs . . . . . *Themarohystrix* Hendel  
 Antennae more than half as long as face; anterior two pairs of orbital bristles proclinate and incurved; mid and hind tibiae without exceptional armature; pteropleural bristle lacking . . . . . 10
10. Mid tibia with two long apical ventral spurs . . . . . *Trypanocentra* Hendel  
 Mid tibia with one long and one much shorter apical ventral spur . . . . .  
 . . . . . *Clusiosoma* Malloch
11. Mesopleura with an outstanding bristle near lower edge centrally; infraorbitals very close together, the anterior pair incurved, the upper pair backwardly directed . . . . . *Hexacmia* Hendel  
 Mesopleura without an outstanding bristle near lower edge centrally; frontal bristling not as above . . . . . 12
12. Wing brown or black, with some hyaline incisions in the margin and three or more small hyaline discal spots . . . . . 13  
 Wing hyaline or yellowish, with brown longitudinal streaks on costa and veins . . 17
13. Dorsocentral pair of bristles almost in line with the supra-alar bristles . . . . . 14  
 Dorsocentral pair of bristles much behind the line of supra-alar bristles . . . . 15
14. Second wing-vein straight; fourth vein slightly arcuate on apical section; dorsocentral bristles slightly behind the transverse supra-alar line (Malayan) . . . . .  
 . . . . . *Diarrhagma* Bezzi  
 Second wing-vein slightly undulated; fourth vein conspicuously arcuate on apical section; dorsocentral bristles slightly proximad of the transverse line of supra-alar bristles . . . . . *Diarrhgmoides*, n. gen.
15. Setulae on the first wing-vein extending the entire length of the node above . . . . .  
 . . . . . *Riozaptilona* Hendel  
 Setulae on first wing-vein not extending over node above . . . . . 16
16. One pair of supraorbital bristles present, and usually only one pair of finer infraorbitals; mesonotum narrow, much longer than its greatest width; scutellum with a few minute hairs on each side of disc; arista long haired . . . . .  
 . . . . . *Termitorixa* Hendel  
 Two pairs of supraorbital and two pairs of infraorbital bristles; mesonotum broad, not much longer than its greatest width; scutellum bare; arista long haired . . . . .  
 . . . . . *Rioza* Walker  
 One pair of infraorbitals and two pairs of supraorbitals; arista short haired . . . . .  
 . . . . . *Acanthoneura* Macquart
17. Inner cross-vein of wing at middle of the discal cell; presutural bristle lacking (Ceylon) . . . . . *Sophtroides* Hendel  
 Inner cross-vein before or beyond middle of the discal cell; presutural bristle present . . . . .  
 . . . . . *Sophira* Walker

## POLYARA Walker.

*Jour. Proc. Linn. Soc. Lond.*, iii, 1859, 122.

This genus was erected for the reception of a single species, described from the Aru Islands.

The head is broader than the thorax in the male, with the frons broader than long, about two-fifths of the head-width, inner verticals much longer than the outer, postverticals and ocellars short, anterior orbitals two pairs, incurved, anterior pair very short and close to the second pair, two reclinate upper pairs,

the anterior pair the longer; face slightly convex, with deep lateral infra-antennal foveae; eye a little higher than long; antennae more than half as long as face; aristae long-haired. Thorax with the following bristles: 1 humeral, 1 presutural, 2 notopleurals, 1 supra-alar, 3 postalars, 1 pair of dorsocentrals a little behind the level of the supra-alars, a pair of strong prescutellar acrostichals, 2 or 3 mesopleurals, 1 sternopleural, 1 pteropleural, and 6 strong scutellars, the disc of scutellum bare. Abdomen slender, with four evident tergites, first (composite) and fourth longer than the others, all with lateral bristles, strongest on fourth and on apex of fifth sternite. Mid and hind tibiae with a few anterodorsal and posterodorsal bristles. Wing with some spur-veins on both sides of the second vein, sometimes extending entirely across the cells, the vein slightly angulate at bases of these spur veins; cross-veins separated by less than the length of the inner, fourth vein much curved forward about apical third; anal cell with a long apical lobe: first and third veins setulose above and below.

POLYARA INSOLITA Walker.

Op. cit., iii, 1859, 123.

Head orange-yellow, with a black spot between bases of antennae and another between each antenna and eye; facial foveae white-dusted. Thorax testaceous yellow, with grey dust, mesonotum with four rather obscure black vittae, pleura largely black, with dense grey dust, the postnotum black. Legs tawny yellow.

Wings (Pl. xi, fig. 4) greyish-hyaline, with dark brown costal stripe and paler markings in some of the cells and on the outer cross-vein. Halteres yellow.

Abdomen black, densely grey-dusted, with a testaceous-yellow dorsocentral vitta on its entire extent that tapers behind.

Length, 7.5 mm.

Bulolo, Wau, New Guinea, three specimens (Dr. C. E. M. Gunther, F. H. Taylor). Walker later recorded the species from Mysol, and Osten-Sacken in 1881 listed it from Ramoi and Dorey, New Guinea.

COLOBOSTROTUS Enderlein.

Zool. Jahrb., Abt. für Syst. Geog. und Biologie, xxxi, 1911, 445.

This is a rather exceptional genus and, though it is not known to occur in New Guinea, and may never be found there, it appears necessary to present a few notes on the genotype.

COLOBOSTROTUS PULCHRALIS Enderlein.

Op. cit., xxxi, 1911, 445.

Has much the appearance of an Otitid, the posterior basal and anal cells of the wing being much longer than usual in the Trypetidae, the anal cell having but a short angular extension at lower apical angle; the frons has but one infraorbital and one supraorbital pair of bristles, and one pair of verticals, the inner. Specimens that I have seen have but four scutellar bristles despite Enderlein's statement that there are six; this difference from the description has already been noted by de Meijere. A peculiar feature of the wing is the presence of a short spur-vein on the posterior side of the second vein above the outer cross-vein. The forward curve of the apical section of the fourth vein is not very marked, but the apical section of the vein is biundulate, making the upward inflection of the tip more apparent. The wing has three blackish fasciae, the first over the inner cross-vein that does not extend beyond the fifth vein and has a

backward extension to almost the fork of second and third veins, the second one extends over apex of second vein and encloses the outer cross-vein, over which it connects with the third fascia on the apical margin of the wing.

Sumatra. I have seen it from the Philippine Islands.

THEMAROIDES Hendel.

*Wien. Ent. Zeitg.*, xxxiii, 1914, 77.

This monobasic genus was erected for the reception of an old species placed by Walker in *Helomyza*. I have not seen the species, which must have been known to Hendel, as the characters used by him for the segregation of the genus are not given by Walker in the original description. Differs from *Rabaulia* in bristling of frons, etc.

THEMAROIDES QUADRIFERA (Walker).

*Jour. Proc. Linn. Soc. Lond.*, v, 1861, 246 (*Helomyza*).

Described from a female that is testaceous in colour, with the apical half of the abdomen black, the black colour most extended on sides, the wings black, limpid at the base and along the hind border, with a white subquadrate costal spot opposite to which the black extends nearly to the hind border, veins black, testaceous in the limpid part, discal transverse vein straight, parted by less than half its length from the border, and by about its length from the prebrachial (inner) transverse vein. Length 11 mm.

Dorey, New Guinea.

THEMARA Walker.

*Op. cit.*, i, 1857, 33.

I have seen several species of this genus, but none from New Guinea.

The undulated second wing-vein, presence of setulae on the first, third, and fifth wing-veins above and on the second and fourth below, the very small intermediate pair of scutellar bristles, and the wing markings distinguish the genus from most of its allies.

Enderlein held that this and *Ptiolina* van der Wulp were synonyms of *Acanthoneura* Macquart, but Hendel did not accept his conclusions.

CHEESMANOMYIA, n. gen.

*Generic characters.*—Belongs to the same group as *Themarohystrix* Hendel, but is distinguished from it and other closely related genera by the exceptionally long first vein (Fig. A). As in other genera of this group the wings are largely black or very dark brown, without pale spots, though there are pale longitudinal streaks in some of the cells. The frons is much longer than wide, with the upper orbits glossy, the bristles consisting of two anterior incurved and two posterior reclinate pairs of orbitals, the outer verticals and the incurved postverticals about half as long as the inner verticals. Face convex, highest at middle (Fig. B), antennae extending to a little below middle of face, gena and lower jowls with numerous fine black bristles (Fig. B). Thorax much as in *Themarohystrix*, but there is neither a pteropleural nor a sternopleural present and the dorsocentrals are well behind the transverse level of the supra-alars. Mid tibia with one long and one short apical ventral spur and no submedian ventral bristle. First and third wing-veins setulose on almost their entire extent above, less extensively and more sparsely so below, fifth setulose basally above, and fourth with a few widely separated setulae centrally above and below.

Genotype, *Cheesmanomyia unica*.

## CHEESMANOMYIA UNICA, n. sp.

♀. Head tawny-yellow, frons, antennae, and palpi brighter yellow, vertical edge and upper occiput brown. Length of frons about 1.75 times its central width, vertex rounded. The four pairs of orbitals about equally spaced, upper anterior and lower posterior bristles longer than the others, the anterior two pairs incurved, upper pairs reclinate, the upper one of latter a little shorter than outer vertical, the latter about half as long as the inner, ocellars minute; postocular cilia fine and black.

Thorax glossy brownish-black, the humeri and a line along upper edge of pleura to base of wing bright yellow, mesonotum in type slightly shrunken because of the teneral nature of the specimen, showing traces of a yellowish central anterior marginal mark. Scutellum with the usual six bristles, the intermediate pair shorter than the others.

Legs yellow, the coxae, femora except their extremities, and basal half of hind tibiae brownish-black.

Wing (Fig. A) dark brown, paler at base, in costal cell, along hind margin, and with pale streaks in centre of discal, first and second posterior, marginal and submarginal cells. Halteres yellow.

Abdomen coloured as thorax, with numerous black hairs and some fine apical and lateral bristles on the tergites.

Length, 8 mm.

Type, East Dutch New Guinea, Jutefa Bay Pim., sea-level to 100 feet, February 1934 (L. E. Cheesman). Type in British Museum.

Genus dedicated to the collector in recognition of the fine collection before me.

I place in this genus also the species described by de Meijere, notes on which are presented below.

## CHEESMANOMYIA NIGRA (de Meijere).

*Nov. Guin.*, v, Zool., 1906, 95 (*Rioxa*).

Similar in almost all respects to *unica*, differing in having the costal margin of the wing more rounded at middle, the costal cell yellow, the central portion of the wing including the posterior basal cell, the posterior half or more of the discal cell yellowish-hyaline, the dark colour fading out over the outer cross-vein, and no subhyaline elongate streaks in the cells of the apical half. There are also some minor differences in the leg colour-markings, but the type of *unica* is teneral and has been attacked by mites or dermestid larvae so that minute distinctions are difficult to draw between it and de Meijere's description of his species.

Length, 6-7 mm.

New Guinea.

## RABAULIA Malloch.

*Ann. Mag. Nat. Hist.*, (11) iv, 1939, 257.

*Generic characters.*—Similar to *Themarohystrix* in structure, differing markedly in the structure of the head (Fig. C), the face being quite prominently conically produced, with the highest point a little below the middle in profile and from that point roundly receding to the mouth margin which is not produced. Antennae extending to middle of face. Eye higher than long, about six times as high as gena. Intermediate pair of scutellar bristles shortest, the disc bare. First,

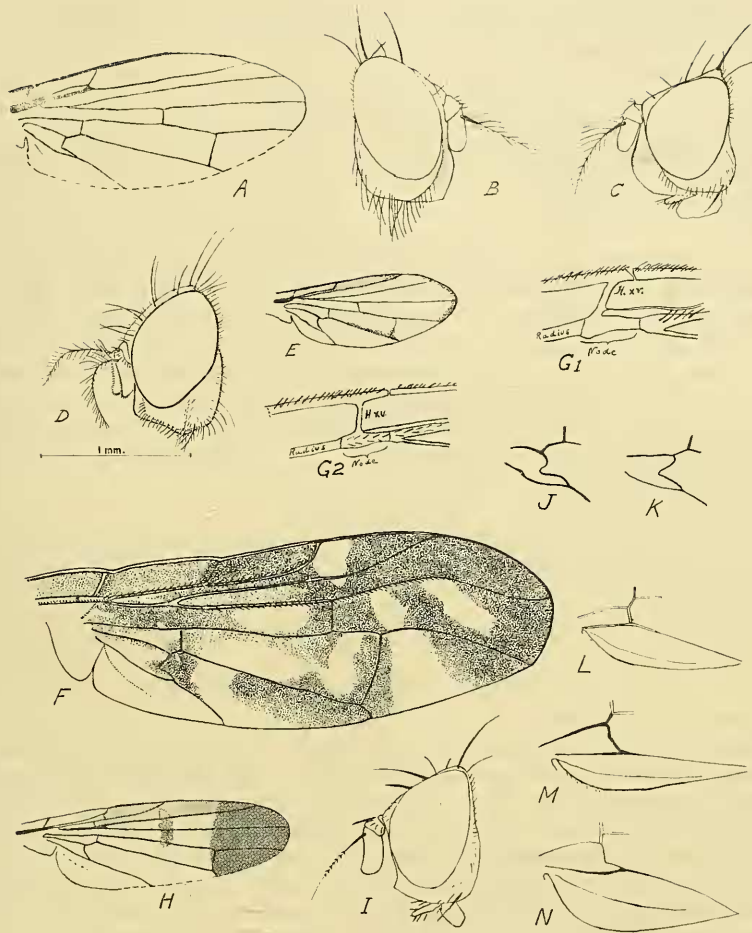


Fig. A.—*Cheesmanomyia unica*, n. sp. Wing.  
 Fig. B.—*Cheesmanomyia unica*, n. sp. Head in profile.  
 Fig. C.—*Rabaulia fascifacies* Malloch. Head in profile.  
 Fig. D.—*Clusiosoma puncticeps*, n. sp. Head in profile.  
 Fig. E.—*Sophira flava* (Edwards). Wing.  
 Fig. F.—*Acanthoneura acidimorpha* Hendel. Wing.  
 Fig. G.—Types of armature of node of stem vein of wing: 1. *Pseudacanthoneura*.  
 2. *Chrysotrypanea*.  
 Fig. H.—*Cyclopsia inaequalis*, n. sp. Wing.  
 Fig. I.—*Pseudina bulolae*, n. sp. Head in profile.  
 Fig. J.—*Ceratitis capitata* (Wied.). Anal cell of wing.  
 Fig. K.—*Ceratitella loranthi* (Froggatt). Anal cell of wing.  
 Fig. L.—*Tephrella sexincisa* Malloch. Anal angle of wing.  
 Fig. M.—*Spathulina acroleuca* (Schiner). Anal angle of wing.  
 Fig. N.—*Sphenella marginata* Fallén. Anal angle of wing.

third, and fifth veins setulose above, both sections of last setulose, first vein not exceptionally long. Mid tibia with two long and two short apical ventral spurs.

Genotype, *Rabaulia fascifacies* Malloch.

RABAUlia FASCIFACIES Malloch.

Op. cit., (11) iv, 1939, 258, Pl. xi, fig. 18.

A small shiny-black species, with black wings, the head largely yellow, the face with a black central narrow fascia.

Rabaul, New Britain.

THEMAROHYSTRIX Hendel.

Wien. Ent. Zeitung, xxxiii, 1914, 78; Ann. Mus. Nat. Hung., xiii, 1915, 432.

This genus was erected for the reception of a species from the Indian Archipelago, but without more definite locality given. The generic description is quite full, but the description of the genotype is very short and rather inadequate for accurate identification. The type species is unrepresented in the material before me. Curran erroneously referred a species taken by the Whitney Expedition on Mouo Island to this genus; I deal with this species under another genus in the following text. Below I present a key for the identification of the species known to me at this time.

Key to the Species.

1. Face with a black central mark; wings blackish-brown, without hyaline markings and the anal angle hardly paler than the disc ..... *suttoni*, n. sp.  
Face and frons entirely yellow; wings dark brown, broadly subhyaline on anal angle .....
2. Mesonotum with four black vittae ..... *erinaceus* Hendel  
Mesonotum with five black vittae ..... *flaviceps*, n. sp.

THEMAROHYSTRIX ERINACEUS Hendel.

Op. cit., xiii, 1915, 433.

Hendel describes this species as having four black mesonotal vittae, the submedian pair continued along the sides of the scutellum, the others along the notopleural suture, and two similar vittae on each pleuron. The abdomen is described as: "Seitenrand der Tergite Schwarzbraun, die Spitze im allgemeinen etwas verdunkelt." The wings are similar to those of *flaviceps*. Length, 9 mm.

In the original description Hendel states that the base of the second vein and the fourth vein to about the middle are setulose. This character holds in both the species before me, and in addition it may be well to add that the second vein has the underside, except at apex, closely setulose and that there are setulae on the underside of the fourth vein to beyond its middle. No doubt these features ought to be taken as of generic import.

Indian Archipelago. Described from a female specimen.

THEMAROHYSTRIX FLAVICEPS, n. sp.

♀. Wing (Pl. xi, fig. 5): In this species the first, third, a part of fourth centrally, and all of the fifth vein are setulose above, and the second on its entire extent from its furcation with third, and a large part of third and fourth, are setulose below. The apical pair of scutellar bristles is a little shorter than either of the other two pairs. The head, thorax, and abdomen are pale testaceous-yellow. The only dark marks on the head consist of a small ocellar spot and a small spot below each eye; antennae and palpi yellow, the third segment of former slightly darkened above. The thorax has five narrow black vittae on the mesonotum, the submedian pair continued over the sides of the scutellum, the pleura each have

two similar vittae, one at middle of the mesopleura that extends to hind margin of that sclerite, the other on the upper margin of the sternopleura that does not extend as far back, and a black spot on the lower margin of the pteropleura. Postscutellum with an irregular black transverse line; postnotum yellow. Abdomen with a black central spot on each of the basal three segments and a black basal fascia on each of the others, sometimes broken; genital cone black. Fore and mid tibiae largely black. Fore femur in female with a posteroventral series of long strong bristles and two series of much shorter bristles on the posterodorsal surface; mid femur with two anterior series of bristles, the lower one the least extensive and the stronger; hind femur with one or two strong bristles beyond the middle on the anteroventral surface. Mid tibia with one or two anteroventral bristles and a series of posterior setulae; hind tibia with two or three rather strong anteroventral bristles and a series of anterodorsal setulae. Knobs of halteres dark brown.

Length, 8-10 mm.

Type and 3 paratypes, Bulolo, New Guinea (F. H. Taylor).

THEMAROXYSTRIX SUTTONI, n. sp.

♂, ♀. This species is very similar to *flaviceps*, but differs in having a vertical black stripe on the face that extends over the prelabrum, the mesopleural vitta very rarely extends over the spiracle, there is no black spot on the pteropleura, there usually is a central dark spot on the sternopleura, and the postscutellum is entirely yellow. The wings (Pl. xi, fig. 6) are hardly paler on the anal angle than on the disc. The mid and hind femora are preponderantly black, instead of very narrowly browned at bases as in *flaviceps*. Abdomen with a narrow black dorsocentral vitta on the basal three tergites, the other tergites usually entirely black.

Structurally as *flaviceps*. Length, 6-8 mm.

Type, male, allotype, and 11 paratypes, Wewak, New Guinea (F. H. Taylor). Occasionally the central dark spot on the sternopleura is lacking.

It appears worthy of note that in *Themarohystrix* and *Neothemara* the scapular bristles are distinct, though rather weak and fine, while in *Clusiosoma*, *Trypanocentra*, and *Cheesmanomyia* these bristles are undeveloped. This lack of scapulars in the last-mentioned group of genera is associated with a slight but evident concavity of the occiput which allows the head to fit more closely against the thorax than it does in the other group, and sometimes this concavity is emphasized by a backward extension of the vertex forming a slight flange, most pronounced in *Rabaulia*. I do not make use of this cephalic character in my generic key, though it may be of even more phylogenetic significance than those I have used.

CLUSIOSOMA Malloch.

PROC. LINN. SOC. N.S.W., li, 1926, 547.

This genus was described from Australia. I have several species before me that I refer here and deal with them below though they do not all occur in New Guinea. The genus is similar in general habitus and characters to *Themarohystrix*, but it is readily separated therefrom on the characters of the frontal and scutellar bristling. The upper pair of reclinate orbitals is much shorter than the second pair, the infraorbitals are not very closely placed, they are equally long, very distinctly shorter than the anterior supraorbital pair, and both are sloped forward and slightly inward; the ocellars are minute, and the postverticals are much more widely separated than in *Themarohystrix*. The preapical pair of scutellar bristles is much shorter than either of the other two pairs, and there is no distinct ptero-

pleural bristle. The fore femur in the male is thicker than the other pairs, and sometimes very strongly spined or bristled on the central part of the posteroventral surface and usually furnished with some short bristles on the anteroventral surface. In the known males either the fore tibia or fore tarsus is modified. There are no long strong bristles on the anteroventral surface of the hind femur beyond the middle in any species as yet known to me.

*Key to the Species.*

1. Face with a brown spot on each side near lower margin; male with no modification of apex of the fore tibia, but with a stout process at the apex of the metatarsus that projects along the anterior side of the second segment and is covered with minute black spines at its apex; wings greyish-hyaline, with a brown border on the costa, on second vein, on third vein beyond the inner cross-vein, on fifth vein along the discal cell, and on fourth vein from before outer cross-vein to its apex ..... *puncticeps*, n. sp.  
Face yellow; fore tibia of male with a spongy swelling at apex on posterior side, and the fore tarsus normal; wings quite evenly blackish-brown apically, usually hyaline on basal half ..... 2
2. Males ..... 3  
Females ..... 7
3. Mesonotum with a broad black central vitta on entire extent that extends laterad of the line of the dorsocentrals and is frequently divided by a yellow central longitudinal line; sides of scutellum narrowly yellow ..... 4  
Mesonotum orange-yellow, with a large subquadrate black mark on each side of anterior margin along inner edges of the humeri that may emit a paler linear streak behind, and postsuturally with four short black vittae, the central pair falling much short of the hind margin, the pair outside the dorsocentral lines not nearly attaining the suture; scutellum broadly yellow on margin ..... 6
4. The dark colour on the wing ceasing abruptly at apex of the entirely whitish-hyaline costal cell, very dark in stigma and beyond it; fore femur with a series of about 8 strong black bristles on the greater portion of the anteroventral surface, most of them distinctly longer than the diameter of the fore tibia ..... *biseriata*, n. sp.  
The dark colour on the wing encroaching more or less distinctly on the apical portion of the costal cell, the latter subhyaline; fore femur with at most some fine setulae on the anteroventral surface, the longest of which are much shorter than the diameter of the fore tibia ..... 5
5. Costal cell of the wing subhyaline, dark brown on edges apically; pleural black vittae broad, the one above occupying about three-fourths of the mesopleural width ..... *centralis*, n. sp.  
Costal cell distinctly browned, the dark colour fading out near basal fourth; the pleural dark vittae narrow, the upper one about one-third as wide as the mesopleura ..... *pleuralis* Malloch
6. Discal cell of the wing hyaline from base to beyond middle ..... *semifusca* Malloch  
Discal cell subhyaline at base only ..... *partita*, n. sp.
7. Mesonotum with either a broad central black vitta or with two complete black vittae that are narrowly separated by a yellow stripe ..... 8  
Mesonotum with a pair of black marks on anterior margin above the humeri and usually with four short blackish discal vittae ..... 10
8. The dark colour of the wing ceasing abruptly at the apex of the entirely whitish hyaline costal cell ..... *biseriata*, n. sp.  
The dark colour on the wing encroaching on the apical portion of the costal cell, the latter subhyaline ..... 9
9. Costal cell dark brown on only the edges apically; black vittae on pleura broad; mid and hind femora and hind tibiae blackened ..... *centralis*, n. sp.  
Costal cell browned to near base; pleural vittae narrow; legs entirely yellow ..... *pleuralis* Malloch
10. Discal cell of wing hyaline on basal half or more ..... *semifusca* Malloch  
Discal cell subhyaline at base only ..... *partita*, n. sp.



## CLUSIOSOMA SEMIFUSCA Malloch.

PROC. LINN. SOC. N.S.W., II, 1926, 548.

A shiny fulvous-yellow species, with the centre of frons and the basal two antennal segments dark brown, face pale yellow, occiput with a V-shaped black mark. Frons about 2.5 times as long as wide, the lower supraorbital longest and strongest of the orbitals, upper pair not more than one-third as long, and much shorter and finer than the postvertical and outer vertical pairs. Antennal bases touching; third antennal segment about 2.5 times as long as wide, rounded at apex, extending to about lower fourth of face. Antennae inserted below middle of head in profile; height of face not two-thirds the length of frons; eye higher than long; gena about one-eighth as high as eye; face convex, with a shallow transverse depression at lower fourth. Proboscis stout; palpi spatulate. Longest hairs on aristae above longer than width of third antennal segment.

Mesonotum with a black mark on each side of anterior margin clear of the paler yellow humeri from which there is a trace of a blackish streak obliquely back to the posterior notopleural callus, and four short postsutural blackish vittae, the inner pair from suture or shortly before it to midway to posterior margin, the outer pair just laterad of the dorsocentrals extending from close to these bristles to near the hind-margin; pleura with a slender black vitta from prothoracic spiracle to the pteropleura; disc of scutellum dark brown. Intermediate scutellars about one-fourth as long as the other pairs; dorsocentrals very little behind the supra-alars. Postnotum largely black.

Legs paler than thorax. Fore femora much thicker basally than the other pairs, with a number of strong black bristles on posteroventral and ventral surfaces in two or more series, longest and strongest centrally, the longest exceeding thickness of femora; the anteroventral surface with a series of rather irregular short black setulae, most numerous opposite apex of tibia; fore tibia with a protuberant plate or flange at apex on posterior side that is densely yellowish-white pilose on apical surface and has some fine short black hairs on outer edge; fore tarsus simple. Hind tibia with one or two median anteroventral setulae, and a series of short black anterodorsal setulae centrally.

Wings yellowish-hyaline, distinctly browned on apical portion beyond an irregular line from stigma obliquely across disc basad of inner cross-vein to near outer cross-vein, darkest in stigma and along costa; costal cell entirely hyaline. Inner cross-vein at about two-fifths from apex of discal cell; first vein setulose from apex of node to tip above and at apex below, third vein setulose both above and below on most of its extent, fifth vein setulose above on extent of anal and discal cells, fourth with a few setulae above at middle. Halteres yellow.

Abdomen almost entirely black-brown above, fifth tergite longer than third and fourth combined in male, rounded at apex, with some quite long marginal bristles.

Length, 5-6 mm.

Mt. Molloy, Queensland (F. H. Taylor). Originally described from Cairns, Queensland.

## CLUSIOSOMA PARTITA, n. sp.

♂. Very similar to *semifusca*, differing in having the black mark on the anterior margin of the mesonotum not connected with a dark posterior line, the pleural vitta broader in front, the fore femur in the male with only three or four long, and about the same number of short posteroventral bristles and practically no black anteroventral setulae, and the wing browned from base of discal cell to

apex, only the costal cell, base of anterior, and all of posterior basal cell, the anal cell, and anal angle of wing, subhyaline. Inner cross-vein near middle of discal cell.

Length, 4.5-5 mm.

Type and one paratype, Vanimo; two paratypes, Wewak, New Guinea (F. H. Taylor).

*CLUSIOSOMA BISERIATA*, n. sp.

♂, ♀. Head as in *semifusca*, the male usually with the interfrontalia infuscated except in front, the female with the frons entirely yellow.

Thorax yellow, mesonotum with a broad black central vitta that covers all the area between the dorsocentrals and sends a narrow streak angularly from anterior margin above the humeri to each wing base, centrally sometimes with a yellow streak of the ground colour; scutellum black except on sides; pleura with a narrow black vitta from propleura to centre of pteropleura; sternopleura black on anterior third below; postnotum black. Bristles and hairs black, as in the genotype.

Legs yellow. Fore femur much thickened at base, tapered to apex, with two or three series of strong black bristles on the posteroventral surface, the outer series with three to five bristles that are much longer and stronger than the others, at the base of the series many short erect fine bristles quite closely placed, the anteroventral surface with a series of six to eight rather strong black bristles, the longest distinctly longer than the diameter of the tibia. Fore tibia with the pad-like expansion of the posterior apex as in *semifusca*, the entire ventral surface of the tibia with dense short erect black hairs. Other characters as in *semifusca*.

Wings subhyaline at bases (Pl. xi, fig. 7), the costal cells hyaline, remainder dark brown beyond a diagonal line from below base of the subcostal vein to apex of fifth vein. Armature of veins as in *semifusca*. Halteres pale yellow.

Abdomen glossy-black, yellow in varying extent basally, more extensively yellow on dorsum in female, sheath of ovipositor black. Fifth tergite of male as long as third and fourth combined, broadly rounded at apex and with some quite strong apical and lateral bristles; sixth tergite of female a little shorter than fifth, both with a series of apical and lateral bristles not as strong as in male.

Length, 4-5 mm.

Type, male, allotype, and 14 paratypes, Wewak; Vanimo, 6 paratypes (F. H. Taylor); Minjemfluss (R. Schlechter), New Guinea.

The last listed specimen in poor condition, from the Lichtwardt collection in the Deutsches Entomologisches Institut, Berlin-Dahlem.

*CLUSIOSOMA CENTRALIS*, n. sp.

♂, ♀. Similar to *biseriata*, differing as follows: The mesonotum shows less yellow, the pleural vittae are much broader, the upper one covering almost all the mesopleura and the lower covering almost the upper half of the sternopleura on the entire length; fore femur of male with a larger number of much shorter setulae on the anteroventral surface, instead of moderately long bristles; the costal cell of the wing is narrowly dark brown at apex, and the anterior basal cell is almost entirely hyaline. In the female the mid and hind femora and the basal half or more of the hind tibiae are blackened, not entirely yellow.

Length, 4.5-5.5 mm.

Type, male, allotype, and 8 paratypes, Wewak, New Guinea (F. H. Taylor).

*CLUSIOSOMA (CLUSIOSOMINA) PUNCTICEPS*, n. sp.

♂, ♀. This species is an aberrant one and may be considered as entitled to subgeneric segregation from typical *Clusiosoma* on the basis of the structure of

the fore tarsus of the male, the closely short-haired anterior basal portion of the fore coxae in both sexes, and the lack of setulae on the fourth vein.

General colour stramineous, shiny, the face with a pair of black spots near the lower margin; interocellar spot black; mesonotum with four dark-brown vittae, the outer pair from above humeri diagonally to bases of wings, the submedian pair on the dorsocentral lines and continued along the sides of the scutellum, with a short forwardly-directed branch on outer side of each on posterior extremity at hind margin of mesonotum; a narrow brown vitta from propleura to centre of pteropleura, and a large brown mark on each side of postnotum. Abdomen broadly dark brown on each side of dorsum. Wing as Plate xi, figure 8, greyish-hyaline, with dark brown clouds on the veins except the inner cross-vein, fourth vein from base to beyond inner cross-vein, and the anal vein.

Head as Figure D, the upper supraorbital bristles longer and the gena behind higher than in *Clusiosoma*.

Thorax as in *Clusiosoma*, the scapulars undeveloped, and the pteropleural lacking but the intermediate pair of scutellars is stronger, usually at least half as long as the basal pair.

Legs entirely pale yellow. Fore femur in male thicker than other pairs, but thickest at middle instead of at bases, the bristles on the basal fourth in several series and very short, beyond that in a single series of moderate length, the anteroventral surface without bristles; in female the femur has five or more moderately strong posteroventral bristles on apical two-thirds. Fore coxae in both sexes with quite dense short black hairs on basal half in front, at apex in male with a fringe of short black hairs, and in female with two short bristles. Fore tibia of male rather thick, with a shallow groove on the entire anterodorsal surface, about six fine erect bristles on the basal half of the anterior surface, and some microscopic erect dark hairs on central part of the ventral surface.

Wing venation as in *Clusiosoma*, and the same single short black costal bristle at apex of the subcostal vein.

Abdomen as in *Clusiosoma*; sixth tergite of female much shorter than fifth.

Length, 4 mm.

Type, male, allotype, and two paratypes, New South Wales: Gosford, in wild fig, 1909.

#### CLUSIOSOMA PLEURALIS Malloch.

*Ann. Mag. Nat. Hist.*, (11) iv, 1939 (1st August).

This species was described from the Solomon Islands and is not amongst those collected in New Guinea, though it may yet be found there.

Type series in the British Museum, Imperial Institute of Entomology.

#### TRYPANOCENTRA Hendel.

*Wien. Ent. Zeitg.*, xxxiii, 1914, 77; *Ann. Mus. Nat. Hung.*, xiii, 1915, 433.

I have experienced some difficulty in arriving at a decision on the identity of this genus, but believe that two species now in hand belong here and accept them as congeneric with Hendel's genotype.

In the generic description Hendel merely separated *Trypanocentra* from *Themarohystrix* on the basis of a few characters such as the narrower frons, with a central hair on each orbit below which there are two forwardly and inwardly directed pairs of infraorbital bristles and above it two strong pairs of reclinate supraorbitals. He also stated that the pteropleural bristle is absent, which is the case in both the species in hand, but there are, as in the other genus, five so-called supra-alar bristles instead of only three as called for in Hendel's description. One

might assume that the scutellum should be covered with stiff hairs, as Hendel says that apart from the characters he lists the two genera are similar, but in neither species I have are there any discal hairs on the scutellum. His further statement that the second and fourth wing-veins are bare does not hold in one of the species that I have, and the one that agrees best with the genotype, there being closely-placed setulae on the entire underside of the second vein and one or two on the central part of the upperside of the fourth vein.

It is possible that Hendel had a different species from either of mine and I present below a key that will aid in distinguishing them.

*Key to the Species.*

1. Thorax glossy orange-yellow, mesonotum with six black vittae, the central and lateral pairs entire, the sublateral pair postsutural, lateral vittae above and clear of the humeral calli, the pleura with two broad black vittae that are incomplete behind; scutellum black, yellow below level of the bristles; prelabrum yellow; second wing-vein bare below; first vein ending in the costa distinctly beyond level of inner cross-vein ..... *vittithorax*, n. sp.  
 Thorax glossy-black, with the humeri and a line along the upper edge of the pleura bright yellow, the underside of the scutellum duller yellow; prelabrum black or dark brown; first vein ending in the costa almost directly above the inner cross-vein ..... 2
2. Third antennal segment infuscated at apex; abdomen black .... *nigripennis* Hendel  
 Antennae entirely pale orange-yellow; sides of the abdomen on basal third distinctly yellow ..... *nigrithorax*, n. sp.

*TRYPANOCENTRA NIGRIPENNIS* Hendel.

*Ann. Mus. Nat. Hung.*, xiii, 1915, 434.

As already stated herein, Hendel says that the second and fourth wing-veins are bare, though he may have omitted taking note of the underside of the second vein, but he did note that there are no setulae on the upperside of the fourth vein. The yellow lateral marginal stripe on the thorax is mentioned, but there is no mention of yellow colour on the sides of the basal third of the abdomen.

Length with ovipositor, more than 5 mm.

One female from the Indian Archipelago.

*TRYPANOCENTRA NIGRITHORAX*, n. sp.

♀. A glossy-black species, with the head orange-yellow, the antennae entirely yellow, the prelabrum brownish-black, and the upper half of occiput glossy-black; palpi yellow. Legs yellow, mid and hind coxae, the greater part of all femora black, fore coxae and basal two-thirds of mid and hind tibiae except extreme bases dark brown. Halteres yellow. Wings blackish-brown, fading into paler brown on anal angle and in the costal cell.

Frons at middle about half as wide as one eye and about 2.5 times as long as wide, widened in front, darkened above, upper orbits glossy-black, vertex laterally black, centrally yellow, slightly raised. Central orbital setulose hair quite long, infraorbitals not as long or as strong as the anterior supraorbital, the latter about twice as long as the upper one which is subequal to the outer vertical and post-vertical bristles, the inner vertical the longest and strongest of the frontals; ocellars microscopic, proclinate and divergent. Face evenly convex, without transverse depression, epistome almost transverse; foveae glossy, moderately deep, extending to lower third of face; antennae descending to ends of foveae, third segment about 2.5 times as long as wide at base, tapered slightly to the rounded apex; longest hairs on the arista about twice as long as width of third antennal

segment. Eye higher than long; genal bristle moderately strong. Proboscis short and stout; palpi club-shaped. Postocular cilia black, bristle-like, much shorter than in *Themarohystrix*.

Thorax with mesonotum convex in front, slightly flattened behind, the surface with numerous short decumbent coarse black hairs; scutellum subtriangular, flattened and bare on disc, like the mesonotum slightly hoary in certain lights. Intermediate scutellars not as strong as the other pairs.

Legs quite stout, fore femur with some strong posteroventral bristles, the other pairs with no ventral bristles; fore tarsus as long as its tibia; outer apical spur on mid tibia about half as long as the central one, a few black setulae about middle of the posterodorsal surface; hind tibia with one anteroventral bristle and a series of anterodorsal setulae to beyond the middle.

Wings brownish-black, paler in costal cell and on the part basad of the inner cross-vein including the entire third posterior and axillary cells. Inner cross-vein at middle of the discal cell, third and fourth veins divergent at apices, second vein closely setulose on entire extent below, fourth with one or two setulae at middle on upperside and with short closely-placed setulae on about the central third below. Squamae and halteres yellow.

Abdomen glossy-black, sides of composite and second tergites yellowish.

Length, including ovipositor, 6 mm.

Type, Wewak, New Guinea (F. H. Taylor).

TRYPANOCENTRA VITTITHORAX, n. sp.

♀. Differs from the species described above in having the head except a small black spot on ocelli entirely yellow. Thorax orange-yellow, glossy, the mesonotum with six black vittae, the central and lateral marginal pairs entire, the submedian pair extending from the suture to posterior margin; pleura with the two rather broad black vittae that do not extend completely to hind margin; scutellum black, yellow below the level of the marginal bristles. Abdomen glossy-black. Legs entirely yellow. Wings more uniformly black than in the other two species.

Structurally similar to *nigrithorax*, differing in having the frons a little wider, the fore tibia shorter than its tarsus, the anterodorsal setulae on the hind tibiae longer than in the other species and the same tibia with two anteroventral bristles instead of only one, the first wing-vein longer, ending quite distinctly beyond the level of the inner cross-vein which latter is a little beyond the middle of the discal cell, and no setulae on either the second or fourth wing-veins.

Length, 6.5 mm.

Type, Papua, Mondo, 5,000 feet, February 1934 (L. E. Cheesman). In British Museum.

Despite the difference in the armature of the wing-veins, I place the three species in the same genus because of their similarity in other structural features.

TRYPANOCENTRA NIGRIPENNIS de Meijere.

*Nov. Guin.*, ix, Zool., livr. iii, 1913, 366. (*Acanthoneura*).

If de Meijere is correct in stating that the presutural bristle is lacking, this species does not belong here, but I suspect that he erred. Should I be correct in placing the species in *Trypanocentra*, then Hendl's species will require to be renamed. There can be no doubt as to the close relationship of this species to those already placed in this genus. The description calls for a species with similar characters to *nigrithorax*, the antennae being entirely yellow and the abdomen

brownish-yellow, but the legs are entirely yellow and the upper and under portions of the mesopleura are yellow, in both of which characters it deviates from *nigrithorax*.

Length, 6 mm.

Dutch New Guinea: Alkmaar.

Should my action be correct in the above placement, I propose the new name *atrypennis* for *nigripennis* Hendel.

SOPHIRA Walker.

*Jour. Proc. Linn. Soc. Lond.*, i, 1857, 34.

SOPHIRA FLAVA (Edwards).

*Trans. Zool. Soc. Lond.*, xx, part 13, 1915, 421 (*Rioxa*).

♀. Entirely fulvous-yellow, rather shiny, species, with the exception of a small round deep-black spot on each side anteriorly of the fifth abdominal tergite; all hairs and bristles concolorous with body; wings hyaline, stigma yellow, the apical half fuscous, a narrow dark-brown border on the costa from slightly before apex of second to just beyond apex of fourth vein, a more diffuse brown streak along the fifth vein from near base of discal cell to its apex, and a small pale-brown spot near the middle of inner cross-vein.

Frons a little more than one-third of the head-width and a little longer than wide, each orbit with two anterior incurved and two posterior reclinate bristles, the lower one of the latter the longest; outer pair of verticals much shorter than the inner, postvertical pair about as long as the former, parallel, ocellars lacking. Eye slightly oblique, a little higher than long; gena not more than one-twelfth as high as eye; face concave below middle, epistome slightly protruded, tumid on sides, height of face less than length of frons. Third antennal segment not more than twice as long as wide, rounded at apex; longest hairs on aristae fully as long as width of third antennal segment; palpi wider than third antennal segment. Postocular cilia yellow and slender.

Thorax with the mesonotum longer than wide, slightly flattened, surface with many depressed short hairs and the following bristles: 1 humeral, 2 notopleurals, 1 presutural, 1 supra-alar, 2 postalars, 1 pair of prescutellar acrostichals and 1 much longer pair of dorsocentrals between these and the supra-alar; mesopleura with 1 bristle, the pteropleura with one setula above longer than the surrounding hairs; scutellum subtriangular, disc flattened and bare, the margin with six bristles, the intermediate pair the shortest.

Legs normal in structure, fore femur with an irregular posteroventral series of bristles; mid tibia with a long apical ventral spur; hind femur with one or two fine ventral bristles on basal half.

Wing as Figure E, stigma longer than the preceding costal section, first vein ending almost directly above outer cross-vein, third costal section about half as long as stigma and slightly shorter than fourth, the second vein slightly curved forward apically, inner cross-vein at about one-third from base of discal cell; first posterior cell slightly widened apically.

Abdomen widest at basal third, sixth tergite short, genital organ slender.

Length, 7 mm.

Originally described from one female taken at Utakwa River, Dutch New Guinea. Four females. Papua: Kokoda, 1,200 feet, Sept.-Oct., 1933 (L. E. Cheesman).

This species is readily distinguished from any yet described by the markings of the wings, there being usually in the other species more than the fifth vein dark bordered, and none having the costal markings as here. There is also no species that is described as having a pair of deep-black abdominal spots as here.

It appears worthy of note that the undescribed male of *Sophira limbata* Enderlein has a prominent conical protuberance on each gena that is armed with numerous curled black bristles at the apex. There is also a colour distinction in the legs, the tibiae being dark brown in the female and yellow in the male. There is some difference also in the bristling of the legs. The inner cross-vein is well beyond the middle of the discal cell of the wing, which is not the case in the species redescribed above. I have both sexes of *limbata* from Borneo, sent to me a number of years ago by the late C. F. Baker. Enderlein described the species from Sumatra. One other species he described from Sumatra, *appendiculata*, agrees with *flava* in having the stigma dark, and a dark cloud along the fifth vein, but it has no dark-brown apical costal margin, and has a rather large dark cloud on the fourth vein from a little before the inner cross-vein to, or beyond, the outer cross-vein that extends into the discal cell and the first posterior cell. Both these species have black thoracic markings.

SOPHIRA QUADRIPUNCTATA Malloch.

*Ann. Mag. Nat. Hist.*, (11) iv, 1939 (1st August).

This species differs from *flava* in having the stigma entirely yellow, the inner cross-vein at about one-third from the apex of the discal cell, and a pair of elongate black marks on the fifth and another on the sixth abdominal tergite.

Solomon Islands.

ACANTHONEURA Macquart.

*Dipt. Exot.*, iii, Pt. 3, 1843, 220; Enderlein, *Zool. Jahrb. Abtl. Syst. Geog. und Biologie*, xxxi, 1911, 414; Hendel, *Wien. Ent. Zeitg.*, xxxiii, 1914, 82; *Flieg. Pal. Reg.* in Lindner, xlix, Trypet., 1927, 16; *Ent. Mitt.*, xvii, 1928, 354.

Hendel in 1914 placed this genus in his key in a section that has the arista short haired, and distinguished the concept by the bare fifth vein, fringed costa, undulated second vein, and the broad head of the male. Some of these characters apply to only the genotype, *fuscipennis* Macquart. Enderlein in 1911 placed along with *fuscipennis*, in *Acanthoneura*, the genera *Themara* Walker, and *Ptiolina* van der Wulp, but I consider his action unjustified and accept both concepts as valid genera, distinguished from *Acanthoneura* as shown in the foregoing key to the genera. Hendel in 1927 changed his opinions somewhat and accepted as *Acanthoneurae* two species in which the arista is moderately long-haired. He then introduced as a distinguishing character the single pair of infraorbital bristles. Later, in 1928, the same author further discussed the genus and some closely related thereto and presented a short generic key. In the same paper, pages 359 and 360, he described two Australian species.

I am accepting as a member of the genus a species from Australia that differs from the two described by Hendel as shown in the key presented below.

*Key to the Australian Species.*

1. Thorax yellowish-brown, mesonotum without black markings; scutellum yellow in the middle, blackish-brown on the sides; abdomen entirely black; wing as Plate xi, figure 9 . . . . . *nigriventris*, n. sp.

- Thorax yellow, mesonotum with black lateral marginal streak and black spot on hind margin; abdomen black, with central subquadrate or triangular mark on each tergite ..... 2
2. Wing with two hyaline incisions on costa beyond apex of first vein; inner cross-vein near middle of the discal cell ..... *australina* Hendel
- Wing with but one hyaline mark or incision on costa beyond apex of first vein; inner cross-vein much beyond middle of the discal cell ..... *acidimorpha* Hendel

ACANTHONEURA AUSTRALINA Hendel.

*Ent. Mitt.*, xvii, 1928, 359.

Thorax yellow, with a black lateral stripe and a large posterior black spot on mesonotum. Wings dark coffee-brown, with the following hyaline marks: tip of first and a large part of middle of second costal cell, almost the basal half of subcostal cell, a spot in front of the inner cross-vein almost as wide as the cell and one a little larger beyond the inner cross-vein in the first posterior cell about one-third the width of the cell and twice as far from the cross-vein as the one in front of the latter, a keel-like marginal incision in the second posterior cell that covers three-fourths of the margin, in the discal cell a large round isolated spot in front of the outer cross-vein, and obliquely behind it and more basally a small hyaline spot, larger than both together is a not entirely hyaline spot near the wing-margin, and the third posterior cell has in front of the fold a quadrate white mark that margins on the discal cell. Especially characteristic of the species are the two white costal incisions in the marginal cell, the first, before the tip, of which cuts into the submarginal cell. Inner cross-vein at middle of the discal cell. Second vein weakly undulated.

Cairns, N. Queensland. Type in Berlin-Dahlem.

ACANTHONEURA ACIDIOMORPHA Hendel.

*Op. cit.*, xvii, 1928, 360.

The inner cross-vein is separated by about half the length of the outer from latter, the third costal section is not longer than the first. Wing markings as Figure F, the sketch being from the type-specimen in the United States National Museum.

New South Wales.

ACANTHONEURA NIGRIVENTRIS, n. sp.

♀. Head a little wider than thorax, dull brownish-yellow, face paler, with pale-grey dust, the interocellar spot black; hairs and bristles black. Frons a little longer than wide, slightly narrowed to vertex, and fully one-third of the head-width, the surface with some short erect hairs except on upper third, the single pair of incurved infraorbitals rather short, near anterior margin, the anterior pair of supraorbitals well above middle of frons and nearly twice as large as the upper pair, the latter subequal to the postverticals and about half as long as the outer verticals, the inner verticals the longest of the cephalic bristles. Face convex in centre, the foveae quite deep; gena higher than width of third antennal segment, the latter fully twice as long as wide, tapered to the narrowly rounded apex; longest hairs on arista about one-third as long as width of third antennal segment; palpi spatulate.

Thorax concolorous with head, darker on sides of mesonotum and centre of the mesopleura, quite dull, only the scutellum distinctly shiny, the latter with the sides blackened, postnotum blackened; all hairs and bristles black, the mesonotal hairs very short, quite dense and depressed. Scapular bristles fine, presutural



bristle lacking, all other bristles strong, the dorsocentral pair nearer to the acrostichals than to the supra-alar line; scutellum distinctly convex, rounded in outline, with the discal hairs longer and finer than those on the mesonotum, the intermediate pair of bristles almost as long as the other pairs. Metasternum haired.

Legs normal, entirely brownish-yellow. Fore femur with a series of black posteroventral bristles; mid tibia with some central posterior setulae and one strong black apical ventral spur; hind tibia with the anterodorsal series of setulae short.

Wing dark brown, the pale markings whitish-hyaline (Pl. xi, fig. 9). First vein with the setulae extending from node to tip above, bare below; third vein setulose from base to a little beyond inner cross-vein both above and below; fifth vein bare; lobe of anal cell quite long and narrow; inner cross-vein less than one-third from apex of discal cell.

Abdomen broadly ovate, the dorsum brownish-black, slightly shiny, the sides of the composite basal tergite brownish-yellow, all hairs and bristles black. Sixth tergite a little shorter than fifth, with a less regular series of moderately long apical bristles than fifth. Sheath of the ovipositor flattened, conical, black.

Length, 7.5 mm.

Type, New South Wales: Wattle Flat (W. W. Froggatt).

#### NEOTHEMARA Malloch.

*Ann. Mag. Nat. Hist.*, (11) iv, 1939, 253.

*Generic characters.*—Similar to *Themara* in most wing characters, but the second vein is not as markedly undulated, and the head in the male is not noticeably widened. The possession of setulae on the upper and under sides of the stem of the second and third veins is distinctive for both genera. In *Neothemara* there are at least two pairs of strong infraorbital bristles, while in *Themara* there is but one pair; in the latter the lower supraorbital pair of bristles is in front of the middle while in *Neothemara* it is at or above the middle. The mesopleural hairs are much stronger in *Neothemara* than in *Themara* and related genera, though there is no one outstanding bristle near the lower central portion such as characterizes *Hexacinia*. The presence of setulae on the fifth wing-vein in *exul* is not sufficient ground for its separation generically from the other two included in this genus.

#### Key to the Species.

1. Fifth vein setulose along most of the extent of the anal cell above; wings dark brown, with yellow markings, the most conspicuous being a V-shaped mark that has its apex on the third vein beyond the level of the outer cross-vein, its upper arm lying along the third vein to base, and its lower arm running obliquely through the discal cell beyond its middle, terminating over the outer of the anal vein (Solomon Islands) ..... *exul* (Curran)
- Fifth wing-vein bare above; wing markings not as above ..... 2
2. Scutellum without evident discal hairs; wing dark brown, with subhyaline markings, the most conspicuous being an irregular streak that stretches from apex of anal vein forward through the apical portion of the discal cell to middle of the outer cross-vein and is divided in second posterior cell (Solomon Islands) .....  
..... *formosa* Malloch
- Scutellum with many short stiff blackish discal hairs; wing dark chocolate-brown, with about 10 small yellowish-hyaline marks and the base pale (Pl. xi, fig. 10)  
..... *formosipennis* (Walker)

## NEOTHEMARA FORMOSIPENNIS (Walker).

*Jour. Proc. Linn. Soc. Lond.*, v, 1861, 252 (*Rioxa*).

This is the only species of the genus as yet known to me from New Guinea. The wing markings are quite different from those of the other two species (Pl. xi, fig. '10).

Wewak, New Guinea (F. H. Taylor).

## PSEUDACANTHONEURA, n. gen.

*Generic characters*.—This genus has many of the characters of *Neothemara*, but differs from it in having the petiole of the second and third wing-veins bare, and the ocellar bristles long and strong. Frons at vertex not one-third of the head-width, the two pairs of infraorbitals rather closely placed, incurved and slightly forwardly directed, anterior reclinate supraorbitals at or a little in front of middle of frons, much stronger than the other orbitals, posterior supraorbitals reclinate; postocular cilia black, bristle-like. Eyes oval, erect, much higher than long; antennae inserted above middle of eye in profile; third antennal segment not twice as long as wide, rounded at apex, not extending to middle of face; the latter vertical, with the foveae deep, extending to a little below middle; gena about one-sixth as high as eye; arista with the longest hairs longer than width of the third antennal segment. Thoracic bristling complete; mesopleurals 2; scutellum with six strong marginal bristles and a few microscopic hairs on lateral edges. Fore femur with a series of strong posteroventral bristles; mid tibia with two or three strong black posterior bristles and two strong black apical spurs, one longer than the other; hind tibia with two anteroventral bristles and a series of strong antero-dorsal setulae. First wing-vein setulose from apex of node to tip above (Fig. G1); second vein undulated; third vein setulose above and below from base to well beyond the inner cross-vein, undulated apically; fifth vein setulose above on apical part of posterior basal cell; the cross-vein closing anal cell rectangularly bent, the short lobe of the cell subtriangular.

Genotype, *Pseudacanthoneura septemnotata*, n. sp.

## PSEUDACANTHONEURA SEPTENNOTATA, n. sp.

♂. A large bright orange-yellow-coloured species, but slightly shiny, with four small deep-black spots on each side of the mesonotum and three on each pleuron, the abdomen more or less browned on bases of the tergites, and the wings yellowish-brown, with some small yellowish-hyaline marks in the cells and some large hyaline marks along the hind margin (Pl. xi, fig. 11).

Head higher than long, uniformly orange-yellow except the small interocellar spot which is black; bristles black, the hairs yellow. Frons about twice as long as its width at vertex; ocellar bristles close together at bases and behind the anterior ocellus. Palpi short and broad.

Thorax rather dull, the mesonotum with quite dense depressed short hairs that are yellow except on the lateral margins, the mesopleural hairs strong and, like all the bristles, black. The four small deep-black spots on the lateral margins of the mesonotum are arranged as follows: above the humerus, above the presutural bristle, behind the posterior notopleural bristle, and on the extreme anterior extremity of the postalar declivity; pleural spots as follows: above the anterior spiracle, near the upper posterior angle of the mesopleura, and on centre of the pteropleura; postnotum with a black streak on each side. The few hairs on the lateral portions of the scutellum are black.

Legs entirely yellow and yellow-haired, bristles dark brown. Fore tarsus slender, longer than fore tibia, basal segment as long as the other segments combined.

Wing as Plate xi, figure 11, the veins brown. Inner cross-vein at about one-third from apex of the discal cell. Only one strong bristle at apex of the subcostal vein. Halteres yellow.

Abdomen broadly ovate, with quite strong bristles at apices and on lateral margins of tergites. Hypopygium yellow.

Length, 8 mm.

Type, Vanimo, New Guinea (F. H. Taylor). Paratype, Gordonvale, North Queensland (E. Jarvis).

*Acanthoneura insignis* de Meijere, from New Guinea, is very like this species in many respects, but has the mesonotum black vittate. It may belong to this genus.

#### RIOXA Walker.

*Jour. Proc. Linn. Soc. Lond.*, i, 1857, 35.

Hendel in 1928 (*Ent. Mitt.*, xvii, 5, p. 350) dealt with the characters of this genus and *Rioxoptilona* Hendel, maintaining, contrary to Bezzi's expressed opinion, that the two are valid genera. His position in the discussion is that the difference in the comparative lengths and widths of the mesonotum, and the shape of the scutellum in the two genotypes justifies his action in making the separation. I have not either genotype before me, but Hendel's course is adopted in this paper.

*Rioxoptilona* does not occur in New Guinea and Australia, and typical *Rioxa* also is lacking there. The species usually placed in *Rioxa* from Australia have been put by Hendel in two subgenera, *Termitorioxa* Hendel and *Dirioxa* Hendel. I accept the first as a valid genus and, though I still retain *Rioxa* for *pornia* and two other species dealt with below, I incline to the opinion that *Dirioxa* may yet be accorded full generic status.

There are apparently three species of the genus in Australia as noted below. I do not consider *Rioxa araucariae* Tryon or *R. jarvisi* Tryon as referable here.

#### RIOXA (DIRIOXA) PORNIA (Walker).

*List Dipt. Ins. Brit. Mus.*, iv, 1849, 1039 (*Trypeta*).—*Trypeta musae* Froggatt, *Agric. Gaz. N.S.W.*, x, 1899, 501; *Repr. Misc. Public. Dept. Agric. N.S.W.*, No. 303, 1899; *Rep. Par. and Inj. Ins.* (1907-8), pt. 3, 1909, 113.—*Rioxa musae* Tryon, *Proc. Roy. Soc. Qsld.*, xxxviii, 1927, 216; Wright, *Agric. Gaz. N.S.W.*, xlviii, 1937, 28.

There has been considerable difference of opinion both as to the correct name for this species and as to its distribution. Hendel erred in stating that the "dornten Schenkel" was part of the original description and that on this account it could not be a Trypetid. Walker referred to the apical ventral spines on the "shanks" or tibiae and not to thorns on the femora. Without a doubt the description applies to what has been most commonly called *musae*, although Walker's description of the wing markings is rather involved.

The species has the round hyaline spot over the outer cross-vein of the wing almost the width of the first posterior cell, but always separated from the wedge-shaped hyaline mark in the second posterior cell by a brown line along the fourth vein, and the hyaline mark in the apex of the discal cell is carried over the fifth vein to the wing-margin. The third wing-vein is bristled above and below to over the outer cross-vein.

Queensland and New South Wales. Type locality of *pornia*, Port Stephens, N.S.W.

#### RIOXA (DIRIOXA) TESTACEA Hendel.

*Ent. Mitt.*, xvii, 1928, 352.

This species has the hyaline spot in the first posterior cell near the outer cross-vein smaller than in *pornia* and connected with the large wedge-shaped

hyaline mark in the second posterior cell, and the hyaline mark in the apex of the discal cell not extending entirely across the cell so that the apex of the third posterior cell is dark brown.

North Queensland. Type in Deutsches Entomologisches Institut, Berlin-Dahlem.

RIOXA (DIRIOXA) BICOLOR (Macquart).

*Dipt. Exot.*, Suppl. v, 1855, 124, Pl. 7, fig. 7 (*Urophora*); Hendel, *Ent. Mitt.*, 1928, 353.

The figure of the wing of this species shows the triangular hyaline mark in the second posterior cell separated from the hyaline spot in the first posterior cell, the latter smaller than in *pornia*, the third posterior cell brown, with a narrow stripe-like hyaline mark near the apex of the discal cell carried to the wing-margin over the fifth vein, and a small hyaline dot near basal third of the third posterior cell.

It may be noted that many of Macquart's figures are rather inaccurate in detail and that he may really have figured *pornia*, but if his type is still in existence, or specimens agreeing with his figure are found, the matter will be settled.

The given type-locality, Tasmania, is undoubtedly erroneous as usual.

TERMITORIOXA Hendel.

*Ent. Mitt.*, xvii, 1928, 351.

This concept was proposed as a subgenus, but I accept it as a genus. The distinguishing characters lie in the presence of but one pair of reclinate supra-orbital bristles and either one or two pairs of much weaker incurved infraorbitals, two, instead of but one, strong apical ventral spurs on the mid tibia and the more widely separated and less extensive setulae on the third wing-vein. These characters may not all be the same in other species than *pornia*, as I have not seen the other two referred to *Rioxa*. In *pornia* the scutellum has no short discal hairs, while in the present genus there are a number of short black hairs on each side above the level of the bristles.

TERMITORIOXA TERMITOXENA (Bezzi).

*Bull. Ent. Res.*, x, 1919, 2 (*Rioxa*).

I have seen two female examples from the original type series from Darwin, N.T., and one male labelled Palmerston, N. Australia, xi, 1908, from the Oldenberg collection in the Deutsches Entomologisches Institut, Berlin-Dahlem.

The type material is slightly teneral and has very evident pale streaks in the centre of some of the cells that are not present in the matured male before me, and the base of the wing is also hyaline and not yellowish as in the latter. There are no black spots on the hind margin of the mesonotum as described by Bezzi, but only two rather indistinct brown marks and in line with these, on each lateral angle of the scutellum, two small subtriangular brownish marks. In *pornia* the hind tibia has an extensive anterodorsal and a shorter anteroventral series of short setulae, while in *termitoxena* there is only the anterodorsal series present.

RIOXOPTILOXA Hendel.

*Wien. Ent. Zeitg.*, xxxiii, 1914, 78.

I am accepting as belonging to this genus an East Indian species that has the setulae on the upperside of the first vein extending the entire length of the node. The general appearance is similar to that of *Acanthoneura*, the wings being

similarly marked. The intermediate pair of scutellars are short, and there are no discal hairs. In both sexes there are some long anteroventral bristles on the hind femur, and in the male the fore femur has several series of closely-placed ventral bristles and the fore tibia is densely short stiff haired on the entire ventral surface.

Not known to occur in New Guinea.

DIARRHEGMOIDES, n. gen.

*Generic characters*.—Frons longer than wide, inner verticals much longer than the other cephalic bristles, outer pair very short, not longer than the parallel postverticals, ocellars minute, two fine reclinate supraorbitals, the upper a little the shorter, and two incurved infraorbitals, the lower the shorter. Eyes about 1.5 times as high as long, gena very narrow. Antennae pendulous, third segment about twice as long as wide, broadly rounded at apex, downy; arista with hairs above, about 6 of them long. Thorax convex on dorsum, mesonotum a little longer than wide, with the following bristles: 1 humeral, 2 notopleurals, 1 presutural, 1 supra-alar, 2 postalar, 1 pair of long dorsocentrals slightly proximad of the supra-alar line, 1 pair of prescutellar acrostichals; the mesopleural, sternopleural, and pteropleural bristles present; scutellum with 6 bristles, basal pair much the longest, intermediate pair not half as long as the apical. Second wing-vein very slightly bent at the hyaline mark, third much arched beyond the inner cross-vein; first and third setulose to almost their apices, third with a few setulae at base below. Legs normal, mid tibia with an apical ventral bristle.

Genotype, *Diarrhegmoides hastata*, n. sp.

DIARRHEGMOIDES HASTATA, n. sp.

♂, ♀. Head dull yellowish-white, frons except the orbits yellowish-brown to fuscous, ocellar spot black, genae and sides of the prelabrum dark brown, occiput except narrowly on edges shiny-black; palpi and basal two segments of antennae and base of third segment yellow, remainder of third segment brownish-black. Frons at vertex fully one-third of the head-width, slightly widened to anterior margin, and nearly twice as long as wide at vertex, the orbits not sharply defined. Eye higher than long, more narrowed below than above, anterior facets enlarged; frons slightly protruded in front; face receding a little below, the foveae shallow; gena about half as high as width of third antennal segment, the bristle far back and short and fine. Antennae inserted at middle of eye in profile, third segment less than twice as long as wide, broadly rounded at apex, downy; arista sparsely haired, the longest upper hairs fully half as long as width of third antennal segment.

Thorax shiny-black, with pale-grey dust, mesonotum with a faint brownish central vitta on which the dust is quite distinct and somewhat silvery, humeri white, and a white vitta from each extending back clear of the lateral margins to the posterior postalar bristle; a broad white vitta on pleura from base of fore coxae to bases of wings below the mesopleural bristle; scutellum yellowish-white, base broadly brown. All hairs and bristles black. All thoracic bristles except the intermediate scutellar pair long, the posterior notopleural shorter than the anterior one.

Legs yellow, mid and hind femora of female slightly browned.

Wing as Plate xi, figure 12, the general colour brownish-black, the markings whitish-hyaline, the veins dark brown. A single quite long costal bristle at apex of the subcostal vein, setulae on first vein from apex of node. Halteres pale yellow.

Abdomen entirely glossy-black, with black hairs and bristles, elongate-oval, the bristles at apices of tergites fine, fifth tergite of male more densely and shorter haired than the other tergites, slightly tapered at apex, longer than fourth; sixth tergite of female distinctly shorter than fifth; sheath of ovipositor elongate-conical, flattened.

Length, 3.5-4 mm.

Type, male, allotype, and one male paratype, Edie Creek, New Guinea, February 1935 (F. H. Taylor).

DIARRHEGMOIDES ARAUCARIAE (Tryon).

*Proc. Roy. Soc. Qsld.*, xxxviii, 1927, 219 (*Rioxa*).

This species is apparently referable to this genus. It is very similar to the genotype, but differs in the wing markings, in having a black mark extending in centre to apex of the scutellum, and in having the abdomen shiny-black with a white fascia on the apex of each tergite from second to fourth inclusive. The legs are also largely infuscated. The length is much greater, 7-7.5 mm.

South Queensland.

The species is known to me only from the description.

HEXACINIA Hendel.

*Wien. Ent. Zeitg.*, xxxiii, 1914, 82.

This genus was erected for the reception of *Acinia stellata* Macquart, but this name was preoccupied and Rondani's specific name for the same species must be used.

The genus is readily recognized by the strong bristle near the middle of the lower edge of the mesopleura, and the presence of several fine upcurved bristles on the lower margin of the gena in front of the usual genal bristle.

There are three accepted species of the genus, all occurring in southern Asia or the East Indies. A fourth species is described below.

*Key to the Species.*

1. Mesonotum with 6 dark-brown vittae; wing with no hyaline mark at apex of the first posterior cell, and with four hyaline dots in the second posterior cell, two of them in the disc (*Formosa*) ..... *palposa* Hendel  
Mesonotum not vittate, sometimes with dark dots laterally; a hyaline or subhyaline mark at the apex of first posterior cell; two spots in second posterior cell, both in the margin ..... 2
2. The hyaline spot at apex of first posterior cell not extending entirely across the cell, subquadrate (East Indies) ..... *radiosa* Rondani (*stellata* Macquart)  
The hyaline or subhyaline mark at apex of the first posterior cell extending across the entire apex, not subquadrate, usually lunate in shape ..... 3
3. Only two hyaline marks between the apex of first and second veins, the basal one touching the tip of first vein; apical pale mark in first posterior cell conspicuous; pleura unspotted or with only one or two faint brownish dots (Philippine Islands) ..... *stigmatoptera* Hendel  
Three hyaline marks between the apices of first and second veins on the costa, the basal one on tip of first vein; apical pale mark in first posterior cell indistinct, brownish-hyaline; pleura with 10-12 black-brown dots .... *multipunctata*, n. sp.

*N.B.*—I have examined two of the already known species in the collection of the United States National Museum.

HEXACINIA MULTIPUNCTATA, n. sp.

♂, ♀. Similar to the other species in having the head, thorax, and abdomen pale orange-yellow, and the wings dark brown, with numerous hyaline dots or short streaks across some of the cells, the hairs on the pale marks glistening white, on other parts of the wing dark brown.

Face with a small dark mark on each side of epistome, prelabrum with a similar mark on each side, dots at bases of the bristles very inconspicuous, ocellar spot dark, occiput with a black mark on each side above neck. Frontal bristling as in the genotype, yellowish-brown in colour, infraorbitals close together, the lower one incurved, upper one longer than lower, incurved and slightly reclinate, supraorbitals reclinate, the upper not half as long as the lower; ocellars minute; outer verticals brown, about half as long as inner and equal to the postverticals; postocular cilia dark brown, pointed; frons about 1.25 times as long as its vertical width, narrowed in front, with some short dark hairs centrally. Face convex centrally, concave in profile, foveae shallow. Eye much higher than long, gena about as high as width of third antennal segment. Longest hairs on arista about as long as width of third antennal segment, the latter about 2.5 times as long as wide, rounded at apex; palpi spatulate, not segmented.

Mesonotum with the insertions of bristles black, and a number of black-brown dots as follows: above each humerus, behind each notopleural bristle, the supra-alar, and base of wing, mesad of the presutural bristle, between the supra-alar and dorsocentral, and between the postalar and acrostichals; pleura with 6 black dots in a line between the anterior and posterior spiracles, evidently rudiments of a black vitta, and about 6 black dots on lower half; scutellum with a black dot at base of each bristle, smallest at the intermediate pair; postscutellum with a blackish spot on each side. Dorsocentral bristles slightly behind the supra-alars. All the usual bristles present in addition to the lower central one on the mesopleura, the mesopleura with two posterior bristles.

Legs entirely yellow except a small black spot beyond middle of ventral surface of mid and hind femora. Fore femur with a series of strong posteroventral bristles; the other femora without ventral bristles; mid tibia with a strong apical ventral spur, and the posterodorsal series of setulae shorter than that on anterodorsal surface of the hind tibia, the anteroventral bristles on hind tibia longer than the setulae; tarsi normal.

Wing dark brown, the pale markings subhyaline (Pl. xi, fig. 13). First vein setulose on entire extent from apex of node to tip above, bare below, third vein setulose on most of its extent above and on basal half below; fifth vein bare. Halteres yellow.

Abdomen with the usual quadriseriate brownish-black spots on dorsum, genital cone in female yellow, all hairs and bristles black, the apical bristles on tergites quite strong.

Length, 6-7 mm.

Type, male, allotype, and 4 paratypes, Wewak, New Guinea; one paratype, Rabaul, New Britain (F. H. Taylor).

#### ENICOPTERINA Malloch.

*Proc. R. Ent. Soc. London*, 1939 (in press).

I recently described this monobasic genus from Fiji. It may yet be found in New Guinea.

#### GROUP II.

This Group is merely an arbitrary one and contains but one genus, with apparently three species, two of them known to me.

Possibly more species may yet be found in this region and, should such be the case, the data presented below will enable students to determine them.

## XARNUTA Walker.

*Jour. Proc. Linn. Soc. Lond.*, i, 1857, 28.

This genus is readily distinguished from its allies by the flattened and coarsely-haired scutellum which has 8 or more marginal bristles. The hairs on the arista are about one-third as long as the width of the third antennal segment, though Walker's figure shows them comparatively longer. The presence of short black setulae on the upper surface of the first vein of the wing to near its base is an exceptional character in this section of the family. The presutural and dorso-central bristles are present, the latter far behind the transverse line of the supra-alars, and the pteropleural, sternopleural, and two upper mesopleural bristles are all strong. First and third veins setulose, fifth vein bare.

Genotype, *Xarnuta leucoteles* Walker.

The two species before me are distinguished as below.

- A. Wing dark brown, broadly subhyaline on anal angle and whitish-hyaline across apex of first posterior cell, inner cross-vein paler than other veins ..... *leucoteles* Walker
- AA. Wing yellowish-brown, dark brown at stigma, on a patch below stigma, a narrow angulate fascia over the outer cross-vein and a large patch in apex except the tip of first posterior cell which is whitish hyaline; anal angle and hind margin broadly subhyaline; inner cross-vein not paler than the other veins ..... *confusa* Malloch

## XARNUTA LEUCOTELES Walker.

*Op. cit.*, i, 1857, 28.

This species was originally described from Singapore. I have seen it from Aru Islands; it may be quite generally distributed in this region.

## XARNUTA CONFUSA Malloch.

*Ann. Mag. Nat. Hist.*, (11) iv, 1939.

A recently described species from the Solomon Islands.

## XARNUTA MOROSA de Meijere.

*Tijdschr. v. Ent.*, lvii, 1914, 198.

This species is known to me only from the description. The wing is dark brown, with three hyaline marks in the submarginal cell, one just beyond the inner cross-vein, the second before apex of second vein, and the third a little beyond the latter in the upper part of the apex of the cell, a narrow hyaline fascia from third to fifth vein between the cross-veins, two hyaline marks beyond it in the first posterior cell, the apical one a streak along fourth vein at its apex, a large hyaline mark in apex of the first posterior cell, and some fainter hyaline markings in the third posterior cell and in anal angle.

Batavia.

## GROUP III.

This group contains species all of which, except *Oedaspoides*, have the postocular cilia black and bristle-like, and most of them have the wing-markings fasciform, though a few have the wings black or dark brown with a number of hyaline spots or marginal markings and a few discal dots or spots. None have the wings with a large number of small hyaline spots on dark fasciae, nor have any species the wings hyaline with stellate apical dark mark. In only one genus included in this Group are the postvertical and another pair of more widely spaced bristles just below their level yellowish-white and stubble-like as in the Tephritinae. The first wing-vein in the latter group is always setulose on the upper side of the



node, while in most species of Group III the node is bare, though sometimes it is setulose and even the section of the vein proximad of the node is at least partly setulose. Possibly a strict application of the type of armature of this vein will result in a different alignment of the genera. I figure the two main types of armature to make clear this previously unused character (Figs. G1, G2).

*Key to the Genera.*

1. Mid and hind femora with short closely-placed stout spines on apical halves of the anteroventral and posteroventral surfaces ..... *Callistomyia* Bezzi  
 Mid and hind femora without short stout spines on the apical halves of the anteroventral and posteroventral surfaces ..... 2
2. Pleurotergite (i.e., that section of the thorax above the impressed line over the posterior spiracle) with some erect fine or stiff hairs on a portion of its surface; presutural bristle lacking; dorsocentral bristles lacking, or but one postsutural discal pair of bristles present; metasternum haired or setulose ..... 3  
 Pleurotergite bare, rarely with one or two fine erect hairs, if there are any hairs present the presutural bristle is present; dorsocentral bristles present (ex. *Colobostrella*) ..... 6
3. Frons with but one pair of orbital bristles, which are situated close to the anterior margin and directed inward; prescutellar acrostichal bristles very short; first wing-vein setulose from well proximad of base of node to tip (Nederland Indies) ..... *Dimeringophrys* Enderlein  
 Frons with at least two pairs of orbital bristles ..... 4
4. Sternopleural bristle lacking ..... 4a  
 Sternopleural bristle present and quite strong ..... 5
- 4a. Stigma much shorter than costal cell; second vein straight .. *Xanthotrypeta* Malloch  
 Stigma subequal to the costal cell measured along the costal vein; second vein very noticeably undulated ..... *Colobostrella* Hendel
5. Frons with one pair of incurved infraorbital and one pair of reclinate supraorbital bristles, very closely placed, the latter near anterior third .....  
 ..... *Ptiolina* van der Wulp  
 Frons with two pairs of infraorbital and one pair of supraorbital bristles, the latter well above middle of frons ..... 5a
- 5a. Infraorbitals strong, upper near the supraorbital pair ..... *Euphranta* Loew  
 Both infraorbital pairs weak, on anterior third, the upper far in front of supraorbital pair which is near upper third ..... *Cyclopsia*, n. gen.
6. Second wing-vein with a short spur-vein near its apex on posterior side; fourth vein bent forward at apex (Nederland Indies) ..... *Colobostrotter* Enderlein  
 Second wing-vein without a preapical spur-vein on posterior side; fourth vein not noticeably bent forward at apex ..... 7
7. Second wing-vein looped or sharply curved forward above inner cross-vein, fused with first for a short stretch, then bending down and continuing to the costa; first vein setulose from near base to apex above; first posterior cell not narrowed at apex; gena nearly as high as eye (Malayan) ..... *Enicoptera* Macquart  
 Second wing-vein not looped, straight or almost so, well removed from first above inner cross-vein; gena not more than one-third as high as eye ..... 8
8. Only two pairs of orbital bristles present; humeral bristle lacking .....  
 ..... *Ortaloptera* Edwards\* ..... 9  
 More than two pairs of orbitals, or the humeral present ..... 9
9. Scutellum with but two bristles (East Indies) ..... *Ichneumonosoma* de Meijere  
 Scutellum with four bristles ..... 10
10. Sternopleural bristle lacking ..... *Colobostrella* Hendel†  
 Sternopleural bristle present ..... 11

\* This genus is unknown to me except from the description. It may have pleurotergal hairs and belong near *Euphranta*.

† This genus is introduced here merely for comparison. Hendel gives as a synonym *Kambangania* de Meijere, which in the male has a deep excavation near the base of the underside of the mid metatarsus, and it also has four pairs of orbital bristles. It appears probable to me that the genus belongs to the *Euphranta* group but, not having seen specimens, I am unable to say if the pleurotergite is haired, so place it in both sections in the key. See text of this paper.

11. Six or more pairs of incurved infraorbital bristles present . . . *Carpophthorella* Hendel  
Not more than three pairs of infraorbital bristles present . . . . . 12
12. Arista with the longest hairs at least as long as the width of the third antennal segment; scutellum with numerous hairs on the disc and sides; metasternum haired; lobe of the anal cell long and narrow, parallel-sided to near its apex, about four times as long as its basal width (East Indies) . . . . . *Gastrozona* Bezzi  
Arista pubescent or with its longest hairs not nearly half as long as the width of third antennal segment . . . . . 13
13. Frons with no bristles on anterior two-fifths, the upper three-fifths with four pairs of bristles, the anterior two pairs apparently representing the infraorbitals, the second one much stronger than the first, both erect and sloping forward, the supraorbitals extremely short, only the upper pair reclinate, the posterior pair of infraorbitals above middle of frons . . . . . *Pseudina*, n. gen.  
Frons with bristles on anterior two-fifths of its extent, not arranged as above . . . 14
14. Frons with three pairs of incurved infraorbitals and one pair of reclinate supraorbitals, the upper pair of the latter and the outer vertical pair lacking; ocellars and postverticals represented by microscopic hairs; lobe of the anal cell elongate, narrowed from base to apex, at base a little less than half as wide as its length . . . . . *Cristobalia* Malloch  
Frons with two or three pairs of infraorbital and two pairs of supraorbital bristles, the posterior pair of latter sometimes very short; outer verticals present; other characters not as above . . . . . 15
15. The postvertical and a pair of equally long bristles slightly below their level and more widely spaced, yellowish-white and stubble-like; lobe of the anal cell sinuous; node of first vein setulose above . . . . . *Ceratitis* McLeay\*  
Postvertical and the outer lower pair of bristles near them black and fine, the lower pair usually much shorter and weaker than the postverticals; lobe of anal cell not sinuous . . . . . 16
16. Fourth wing-vein bent or dipped down into the discal cell proximad of the inner cross-vein; first vein almost rectangularly bent forward to costal vein, the stigma not half as long on costa as the costal cell . . . . . *Anomoea* Walker  
Fourth wing-vein straight proximad of the inner cross-vein . . . . . 17
17. Wing dark brown on the costal half or more, with or without a hyaline or subhyaline mark on the costa beyond the apex of first vein and with the hind margin more or less broadly hyaline, the posterior edge of the dark portion usually irregular; lobe of the anal cell rather short, tapered to apex . . . . . *Hemilea* Loew  
Wing either black with hyaline marginal and discal markings, or almost equally black and hyaline, the black markings not confined to costal half . . . . . 18
18. Frons not less than twice as long as wide, the ocellar bristles quite short and fine, not longer or stronger than the posterior supraorbitals; anal cell with long narrow lobe . . . . . *Pseudosphenicus* Hendel  
Frons much less than twice as long as wide, the ocellar bristles long and strong, distinctly longer and stronger than the posterior supraorbital pair . . . . . 19
19. Postocular cilia yellowish-white; scutellum yellow, with black spots at bases of the bristles; third antennal segment sharply angulate at apex above . . . . .  
. . . . . *Oedaspoides* Bezzi  
Postocular cilia and all other cephalic bristles black . . . . . 20
20. Scutellum black and yellow; anal cell with an elongate apical lower lobe (fig. K) . . . . .  
. . . . . *Ceratiella*, n. gen.†  
Scutellum black; anal cell with a very short angular lower apical lobe . . . . .  
. . . . . *Spheniscomyia* Bezzi

*N.B.*—It should be noted here that where I have given in parentheses ( ) the locality of a genus listed in the above key it is not treated in the following text, though there may be, in one or two cases, some reference to such a genus under one of those that occur in New Guinea or Australia. There is a possibility that some of these genera may yet be found in the region covered by this report.

#### EUPHRANTA Loew.

*Mon. Europ. Bohrl.*, 1862, 28.—*Lagarosia* van der Wulp, *Tijdschr. v. Ent.*, xxxiv, 1891, 210.

\* The characters cited for the segregation of this genus will suffice for use in this region only.

† See note, p. 465.

I am synonymizing the above two generic names after a careful comparison of the type-species of each. Hendel, in his key to the genera in 1914, presents no better character for the segregation of *Lagarosia* from its allies than the type of wing markings, and a classification based upon this character is unreliable.

My examination of the genotypes discloses the fact that they are closely related, having the same cephalic characters as well as the same thoracic bristling, the presutural bristle being absent in both, while the wing venation and bristling are the same. One important character, not mentioned by any writer on the family except Hendel, that links both and segregates them from most related genera known to me, is the presence of many erect fine hairs on the metapleura above the central furrow. I consider therefore that the above cited synonymy is warranted.

The long-haired arista, four scutellar bristles, 2-3 infraorbital and 1 supra-orbital, lack of the presutural bristle, very small ocellars, the setulose third wing-vein, and metapleural hairs, will separate this genus from any other in the Australian region.

But one species is as yet reported from Australia.

#### EUPHRANTA MINOR Hendel.

*Ent. Mitt.*, xvii, No. 5, 1928, 362.

A small species, 4 mm. in length without ovipositor. Head yellow, frons shiny, as wide as one eye and 1.5 times as long as wide; two infraorbitals. Longest hairs on arista about two-thirds as long as width of third antennal segment. Thorax reddish-brown, whitish-dusted, shiny, hind margin of mesonotum and the scutellum bare, the latter paler yellow, flattened on disc. Mesophragma (= pleurotergite) white-haired. Halteres yellow. Legs including the coxae yellow. Abdomen rusty-coloured, shiny, yellowish-haired, the apical two tergites with black marginal bristles. Venation and markings of the wings as in *Staurella crux* Bezzi. The brown basal cross-band lacking, the one over the inner cross-vein as in *crux*. There are some additional dark markings, including a straight fascia over the outer cross-vein to the costa, but the tip of the wing has a white mark that extends over the tips of third and fourth veins and is convex inwardly; the posterior basal cell is brown, with only a small hyaline mark on the hind margin; base of wing hyaline, the veins yellow.

Darwin (Palmerston), N. Territory, Australia. Type in collection of Deutsches Entomologisches Institut.

#### EUPHRANTA SCUTELLATA Malloch.

*Ann. Mag. Nat. Hist.*, (11) iv, 1939.

A larger species than *minor*, averaging 8 mm. in length, with thorax black except on each side just behind suture, two large spots in centre of postsutural area, and the apical two-thirds of the scutellum which are yellow. Legs preponderantly black. Wing with a large black-brown mark from base of stigma to apex that extends back to middle of the discal cell, a large spot on costa just beyond apex of first vein and the extreme apex whitish-yellow.

Solomon Islands.

#### XANTHOTRYPETA Malloch.

*Op. cit.*, (11) iv, 1939, 250.

*Generic characters.*—This genus is similar to *Euphranta* in all characters, but lacks the sternopleural bristle. The frons has two pairs of inwardly-directed

infraorbitals, the upper one twice as far from the lower as it is from the single pair of reclinate supraorbitals, ocellars microscopic, the postverticals mere hairs, outer verticals about half as long as inner pair, surface of frons shiny. Longest hairs on arista about as long as width of third antennal segment, the latter three times as long as wide, slightly tapered to the narrowly rounded apex; face concave in profile, parafacials invisible centrally in profile, gena narrow. Central pair of scapular bristles lacking, lateral pair distinct, presutural, acrostichal, sternopleural, and pteropleural bristles lacking, scutellum flat above, with four strong bristles and the disc closely short-haired, metapleural (pleurotergite) with the upper half above the impressed line furnished with numerous fine erect hairs. First wing-vein setulose from well before node to apex above and at apex below, third setulose to about midway from base to inner cross-vein above and at base below; first posterior cell not narrowed at apex; anal cell with a subtriangular apical lower angle or lobe.

Genotype, *Xanthotrypeta bimaculata* Malloch.

XANTHOTRYPETA BIMACULATA Malloch.

*Ann. Mag. Nat. Hist.*, (11) iv, 1939, 250, Pl. x, fig. 13.

A reddish-yellow species, with an elongate shiny-black mark on each side of anterior margin of mesonotum above the humeri, the frons darkened centrally, legs yellow, the mid and hind tibiae largely browned, the wings yellowish, more distinctly so in front, with a fuscous fascia from stigma to over the inner cross-vein that is carried forward to connect with the large apical black-brown mark beginning midway between the cross-veins and filling the apical third or more of the wing except the hind margin as far in as the middle of the discal cell, a small mark in margin of the second posterior cell near lower extremity of the outer cross-vein, and a narrow lunate mark across the apex of the first posterior cell, these excepted portions whitish-hyaline.

Length, 8 mm.

Solomon Islands. Type in Imperial Institute of Entomology.

CYCLOPSIA, n. gen.

*Generic characters.*—Frons depressed down centre, with two pairs of rather closely placed weak incurved infraorbital bristles on anterior fourth, and one pair of stronger reclinate supraorbital bristles near upper third, only the inner verticals present; ocelli extremely close together. Antennae extending to lower fourth of face, third segment fully three times as long as second and its own width, slightly tapered to the rounded apex; arista with the longest hairs not more than half as long as width of third antennal segment. Face slightly receding below, foveae rather deep, epistome not projecting; eye higher than long, more narrowed below than above; gena narrow, the bristle weak. Thorax with the following bristles: outer pair of scapulars, 2 notopleurals, 1 supra-alar, 2 postalars, 4 scutellars, the prescutellar pair of acrostichals widely separated, the mesopleural, pteropleural, and sternopleural bristles rather weak, the acrostichal pair reduced to short fine hairs. Scutellum flattened, subtriangular, disc minutely haired. Legs normal, femora not spinose; mid tibia with a strong apical ventral spur. Wings narrow, much as in *Adrama*, but the second vein is straight, about as far from costa as from third vein just beyond apex of first, and the stigma is equal in length to the costal cell. Abdomen elongate-ovate, basal composite tergite nearly as long as the next two tergites combined, fifth tergite longer than fourth, tapered to apex.

Genotype, *Cyclopsia inaequalis*, n. sp.

## CYCLOPSIA INAEQUALIS, n. sp.

♂. Head orange-yellow, dull on face, genae, and lower occiput, shiny from near anterior margin of frons and becoming glossy behind and on upper occiput, the frons with a large brownish-black mark from near anterior margin to ocelli that is narrow in front and widens to fill entire width at ocelli, the vertex reddish-yellow, upper occiput glossy-black except in centre; third antennal segment brownish-black except extreme base; palpi yellow. Frons nearly twice as long as wide; surface hairs microscopic, yellow.

Thorax brownish-yellow, distinctly shiny, the humeri and a broad streak down the posterior third of the mesopleura to middle coxae lemon-yellow, the posterior notopleural calli and scutellum pale-yellow; mesonotum with two broad brown vittae along the inner edges of the humeri traceable on entire extent, darkest in front and paler behind the suture, the intervening area grey-dusted and with quite dense pale hairs; pleura blackened in front of the yellow central stripe except on the propleura, and entirely black behind it, including the postnotum, the latter slightly grey-dusted. All the bristles black; hairs largely pale, the scutellar hairs black. Scutellars four.

Legs orange-yellow, mid and hind tibiae dark brown; fore legs missing. Mid tibia with a series of very short posterodorsal setulae; no setulae evident on the hind tibia, tarsi incomplete, the metatarsi long and slender.

Wing as Figure H, hyaline, yellow along the costa from the fork of second and third veins, with a small deep brown transverse mark on the inner cross-vein that does not extend to costa, and the entire apex dark brown from slightly before the outer cross-vein and well before the apex of second vein, the inner edge of the mark almost straight. First vein setulose from a little before node to apex above, bare below; third vein setulose from base one-third of the distance to inner cross-vein above and at extreme base below; lobe of anal cell elongate triangular. Halteres yellow.

Abdomen glossy reddish-yellow, blackened from apex of composite tergite to tip, with a subtriangular grey-dusted mark in centre of apices of third and fourth tergites. Hairs quite dense, short, decumbent, and black; no bristles present.

Length, 8 mm.

Type, Dutch New Guinea, Cyclops Mts., Sabron, Camp 2, 2,000 feet, May 1936 (L. E. Cheesman). Type damaged in shipping, the head mounted on same card, fore legs missing.

This genus connects the *Adraminii* with the *Euphranta* group rather distinctly.

## COLOBOSTRELLA Hendel.

*Wien. Ent. Zeitg.*, xxxiii, 1914, 79; *Ann. Mus. Nat. Hung.*, xiii, 1915, 428.

This genus probably belongs to the group with haired pleurotergite, but I have not seen the genotype, which is described from Celebes. It may occur in New Guinea.

In Hendel's description the following bristles are given as lacking or rudimentary: ocellar, postvertical, presutural, dorsocentral, and sternopleural. He also lists the "Schieterborsten", but I am uncertain just what bristle he refers to by this name. In his 1914 key he states that there is but one infraorbital bristle, and in 1915 he states that there is an infraorbital and a supraorbital pair. If *Kambangania* de Meijere is a synonym then there is a difference in the frontal bristling, as de Meijere says that in his genotype there are four pairs of orbitals,

the anterior and posterior pairs being weak and hair-like. In both the genotypes the second wing-vein is distinctly undulated, and the first vein enters the costa much farther from the apex of the subcostal vein than the latter is from the humeral cross-vein. In *Xanthotrypeta* the stigma and the costal cells are subequal on the costal edges, and the second vein is straight. In *Xanthotrypeta* the inner cross-vein is at or slightly before the middle of the discal cell, while in the other two species it is about the apical third of that cell.

COLOBOSTRELLA RUFICAUDA Hendel.

Op. cit., xiii, 1915, 429.

A shiny reddish-yellow species. Mesonotum with a large glossy-black rounded mark on each side between the humeri and the suture and two similar elongate marks behind the suture that widen behind; pleura with two black spots, one at the prothoracic spiracle and one before the mesopleural suture; postnotum with two black stripes. Abdomen with a black mark on each side of each tergite. Wing yellowish-hyaline, with a narrow black fascia from middle of stigma to over second vein, a broader slightly-curved fascia from costa to middle of discal cell just beyond the inner cross-vein that is narrowly connected on the costa with the large apical black mark, the latter with a hyaline spot near apex of the first posterior cell.

Celebes.

Possibly a synonym of *Sophira bistriga* Walker, described from Celebes.

PSEUDINA, n. gen.

*Generic characters*.—Frontal bristling different from that of any allied genus, the orbitals consisting of four pairs, the upper two pairs very small and evidently the supraorbitals, the upper infraorbital pair at upper third of orbits and twice as long as the anterior pair, both pairs slightly proclinate and incurved; ocellars minute, shorter than the incurved postverticals; outer verticals much shorter than the inner pair; face slightly carinate in centre, epistome not projecting; post-ocular cilia dark and bristle-like; antennae normal; aristae pubescent. Thorax with all bristles present, the four scapulars fine, dorsocentral pair distinctly behind the supra-alars, prescutellar acrostichals strong; mesopleurals 2; scutellum with one or two luteous hairs and four strong black marginal bristles. Wings marked much as in *Rioxa*, the first vein setulose from near apex of node to tip above, bare below, third vein setulose from base to near level of outer cross-vein above and below, fifth vein bare; inner cross-vein about one-fifth from apex of discal cell. Legs normal, fore femur with posteroventral bristles, mid tibia with no central setulae, and a strong apical ventral bristle, hind femur without ventral bristles, hind tibia with a regular series of short closely-placed anterodorsal dark setulae.

Genotype, *Pseudina buloloae*, n. sp.

PSEUDINA BULOLOAE, n. sp.

♂. Glossy brownish-yellow, face a little paler, small ocellar spot black; mesonotum without dust or vittae; humeri, scutellum, and a streak along upper edge of pleura lemon-yellow; abdomen with black mark on each side of each tergite at curve; legs yellow; wings dark brown, with hyaline and yellowish markings (Pl. xi, fig. 14).

Frons shiny, depressed centrally, a little longer than wide and slightly narrowed in front, with a few microscopic pale hairs; profile as Figure I.

Mesonotal hairs short, dark, depressed and numerous. Scutellum short, flattened above. Legs normal.

Wing-veins dark brown. Lobe of anal cell elongate; first posterior cell parallel-sided at apex; stigma short, black-brown except a hyaline line across base. Halteres yellow. Squamae brown, the fringe dark brown.

Abdomen broadly ovate, convex above, with blackish hairs and black bristles. Fifth tergite longer than fourth, rounded at apex, with some quite strong apical and lateral bristles.

Length, 6 mm.

Type, Bulolo, New Guinea (F. H. Taylor).

This species reminds one of the species of the *Rioxa* group, but there are only four scutellar bristles, though a bristly hair on one side in the type-specimen is in the position that the intermediate pair of bristles occupies and may represent that pair, and the arista a merely short pubescent.

#### HEMILEA Loew.

*Mon. Eur. Bohrl.*, 1862, 32.—*Ocnerus* Costa, *Atti Acad. Sci. Napoli*, v (2), 1844, 102.

This genus is unrepresented in the New Guinea collection before me, but it may yet be found here as there are species occurring as close as the Solomon Islands and Fiji.

In a paper now in the press dealing with the Solomon Islands species I present data on the species from this region so that it may be possible to identify any such that occur in New Guinea if already described.

The genus extends from Europe to Japan and southward to the Solomons with some closely-related species that have been removed to other genera in Africa. All the known species have the costal half or more of the wing dark brown, and the posterior half hyaline, the costa sometimes having a hyaline mark close to the apex of first vein, and the hind edge of the dark portion being more or less irregular in most species.

#### CALLISTOMYIA Bezzi.

*Mem. Ind. Mus.*, iii, 1913, 124.

This genus contains four species, only one of which is known to occur in the region under consideration. The genotype, *pavonina* Bezzi, occurs in India and Formosa. I have examined specimens. The outstanding character of the genus consists of the small stout spines on the apical halves or more of the anteroventral and posteroventral surfaces of the mid and hind femora. The genotype has the following bristles on the head and thorax: 2 supraorbitals, 3 infraorbitals, inner verticals long, outer pair short, postverticals short; 1 humeral, 1 presutural, 2 notopleurals, 2 postalars, a pair of dorsocentrals almost in line with the acrostichals, 4 scutellars, 1 mesopleural, 1 pteropleural, 1 sternopleural, and a fine propleural just below the humerus. Ocellars lacking. Scutellum flat, subtriangular. First and third wing-veins setulose, those on first vein carried to base of the node. Venation closely similar to that of *Sophira*. Sixth tergite of abdomen in female shorter than the fifth.

#### CALLISTOMYIA HORNI Hendel.

*Ent. Mitt.*, xvii, 1928, 361.

Similar to the other species of the genus in general coloration, agreeing with *pavonina* Bezzi in having a black spot on the lower central portion of the

face, and differing from it in the lack of a black fascia on the bases of the abdominal tergites. Thorax brownish-yellow, the humeri and a vitta below the notopleural suture lemon-yellow, the latter continued to base of the wing, scutellum lemon-yellow, mesonotum with five black vittae posteriorly.

Darwin (Palmerston), N. Territory, Australia. Type in the collection of the Deutsches Entomologisches Institut, Berlin-Dahlem, Germany.

CARPOPHTHORELLA Hendel.

*Wien. Ent. Zeitg.*, xxxiii, 1914, 80; *Ann. Mus. Nat. Hung.*, xiii, 1915, 448.

This genus was erected for the reception of a new species, *magnifica*, from Formosa. It is the only species as yet assigned to the genus. The very striking character of the 6 to 10 pairs of strong incurved equal infraorbital bristles distinguishes the genus from its nearest allies. The species bear a superficial resemblance to those of *Gastrozona* Bezzi and *Callistomyia* Bezzi.

There are two known species that may be separated as below.

- A. Frons with 6-7 pairs of infraorbital bristles; wing with a subhyaline mark on costa just beyond apex of first vein; mid and hind tibiae browned apically (Formosa) ..... *magnifica* Hendel  
 A.A. Frons with 10 pairs of infraorbital bristles; wing without a subhyaline mark on the costa just beyond apex of first vein; legs entirely orange-yellow (Solomon Islands) ..... *setifrons* Malloch

It is possible that *setifrons* will be found in some of the other island groups in the same region.

CARPOPHTHORELLA SETIFRONS Malloch.

*Ann. Mag. Nat. Hist.*, (11) iv, 1939.

The large number of closely-placed pairs of incurved infraorbital bristles in this species will at once distinguish it from any other in this region. Solomon Islands.

CRISTOBALIA Malloch.

*Ann. Mag. Nat. Hist.*, (11) iv, 1939.

*Generic characters.*—Frons at vertex less than one-third of the head-width, narrowed to anterior margin and more than twice as long as wide, with three pairs of infraorbital and one pair of supraorbital bristles, the ocellar and outer vertical pairs undeveloped; arista very short haired, longest hairs about twice as long as width of arista at base. Thoracic bristling complete, scutellars four. First and third wing-veins setulose; inner cross-vein at middle of the discal cell.

CRISTOBALIA LUTEA Malloch.

*Op. cit.*, (11) iv, 1939, 265, Pl. xi, fig. 22.

Described from the Solomon Islands.

ANOMOEIA Walker.

*Ent. Mag.*, iii (1), 1835, 80.—*Phagocarpus* Rondani, *Bull. Soc. Ent. Ital.*, iii, 1871, 171.

Most recent writers on the family have used Rondani's name for this genus under the belief that Chevrolat's similar name had priority over that of Walker. It has been conclusively proven that the part of Chevrolat's Catalogue containing the name *Anomoeia* did not appear until 1837. Thus Walker's name must be used for the Trypetid genus.

The genus has been generally misinterpreted by writers on the family and a number of species have been placed in it that do not properly belong to it, while at least one species that belongs here has been placed in another genus.



The most striking character for the recognition of the genus is the downwardly bent antepenultimate section of the fourth wing-vein, a character met with in the Otitid genus *Rivellia* Robineau-Desvoidy. The anal cell has a long narrow apical lower lobe that is sometimes as long as the free part of the anal vein, and the third antennal segment is about twice as long as wide, nearly attaining the epistomal edge.

There are four species of the genus, as I interpret it, known to me; they may be distinguished as in the key given below. All except the genotype, *permunda*, may yet be found in New Guinea or on islands close to it.

*Key to the Species.*

- |   |                             |
|---|-----------------------------|
| 1. Halteres bright yellow .....   | 2                           |
| Halteres with dark-brown or black knobs .....   | 3                           |
| 2. Thorax largely, and the legs entirely yellow (Palaeartic, Formosa) ..  | <i>permunda</i> Harris      |
| Thorax entirely, and the legs largely black .....   | <i>nigrithorax</i> , n. sp. |
| 3. The small hyaline mark in the costal cell of the wing quadrate, extending to the costal vein, the latter yellow along the edge of the mark (Solomon Islands) ..... | <i>quadrata</i> Malloch     |
| The small hyaline mark in the costal cell of the wing elongate, not attaining the costal vein, the latter black along the edge of the mark (Fiji Islands) .....       | <i>curvinervis</i> (Bezzi)  |

ANOMOEA NIGRITHORAX, n. sp.

♀. Head black, frons dull brown, with whitish-grey dusting, most evident on the orbits, face brown, shiny below, with rather dense whitish-grey dust, gena brown, occiput shiny black; antennae and palpi red. Frons at vertex fully one-fourth of the head-width, slightly narrowed to anterior margin, and fully twice as long as its central width; uppermost of the three pairs of incurved infraorbital bristles at about two-fifths from upper margin, not much in front of and distinctly laterad of the anterior pair of supraorbitals, the latter much longer than the posterior pair; outer verticals about half as long as the inner pair; surface hairs centrally rather numerous, short, erect and dark. Antennae elongate, nearly attaining the epistome, third segment about three times as long as wide, rounded at apex; arista pubescent. Gena not higher than width of third antennal segment, with numerous short stiff black hairs, vibrissal angle more produced than in the other species.

Thorax black, glossy, the mesonotum rather densely grey-dusted on disc, with three black vittae on anterior half. Dorsocentral bristles slightly in front of the transverse supra-alar line; scutellars subequal, the hairs on sides of scutellum very minute.

Legs black, fore femora brownish on anterior surface, fore tibiae, mid tibiae except their bases, and apices of hind tibiae, and all the tarsi orange-yellow.

Wing hyaline, with black markings as Plate xi, figure 15, the small hyaline mark in the costal cell quadrate, extending entirely across the cell, the vein in front of it black. Second vein not running for any distance closely alongside the costal vein at its apex as in some of the other species, third vein with a distinct arch beyond the black preapical fascia, inner cross-vein at about its own length from outer; setulae on third vein extending to or slightly beyond the inner cross-vein above. Halteres yellow.

Abdomen glossy-black, with narrow grey-dusted apical fascia on second and third tergites. General shape broadly ovate, ovipositor sheath flattened, short and broad.

Length, 4.5 mm.

Type, Edie Creek, New Guinea (F. H. Taylor).

## SPHENISCOMYIA Bezzi.

*Mem. Ind. Mus.*, iii, 1913, 146.

This genus is very similar to *Tephrella* Bezzi, differing essentially in having all the cephalic bristles including the postocular cilia black, the latter short and fine, and the scutellum with four strong bristles. There is a slight angular production of the lower apex of the anal cell that is sometimes not evident in *Tephrella*.

## SPHENISCOMYIA SEXMACULATA (Macquart).

*Dipt. Exot.*, ii, Pt. 3, 1843, 222 (*Urophora*).

There is some question as to the distinctness of this species from *atilla* Walker. The entirely yellow hind tibiae have been cited as a distinguishing character for the latter. In both the specimens I have from this region the hind tibiae are infuscated on their basal halves or more, and in the specimen in which the antennae are present they are largely darkened.

Admiralty Island; Papua. Recorded by Hendel from Australia in 1928 (*Ent. Mitt.*, xvii, 364).

## PSEUDOSPHEINISCUS Hendel.

*Suppl. Ent.*, ii, 1913, 82.

This genus contains species that rather closely resemble those of *Anomoca*, but the fourth wing-vein is straight before the inner cross-vein. The frons is usually about two or more times as long as its central width, and the ocellar bristles are quite weak, contrasting markedly with those of *Spheniscomyia*. I have not enough material to justify definite conclusions on the status of the genus or the various species referred here, but it appears possible that some future worker may subdivide the present concept. In the only New Guinea species I have the frons is a little less noticeably narrowed than in some of the other species, and the antennae are a little shorter than in such species as *fossata* Fabricius, to which it is rather closely similar in most other features.

I present below a key to the three species from this region that are known to me at this time.

*Key to the Species.*

1. The entire costal margin of wing from base to middle of apex of first posterior cell black, the black pattern sending three branches to or almost to hind margin, the first on the anal cell that is narrow and does not reach the apex of sixth vein, the second very broad, tapered behind and covering the basal two-thirds of the discal cell, the third in the form of an inverted V, with its inner arm over the outer cross-vein and enclosing it and the outer arm ending near apex of the fourth vein (Fiji) ..... *bifidus* Bezzi
- Costal border not entirely black, the costal cell partly whitish-hyaline, and another break in the dark mark beyond apex of first vein, the pattern not as above .. 2
2. Costal cell with two subquadrate whitish-hyaline marks; mesopleura except its anterior margin lemon-yellow (Fiji) ..... *mesopleuralis* Malloch
- Costal cell hyaline, dark brown along the anterior and apical edges; mesopleura entirely black ..... *taylori*, n. sp.

## PSEUDOSPHEINISCUS TAYLORI, n. sp.

♂, ♀. Head entirely orange-yellow, the ocellar spot only dark. Frons at vertex one-fourth of the head-width, hardly narrowed in front, and twice as long as wide; with the usual bristles, the ocellars about as long as the posterior supraorbitals. Antennae extending to lower third of face.

Thorax shiny black, humeri and propleura brownish-yellow, mesonotum rather densely brownish-grey-dusted, with three faint linear dark vittae, the outer pair

most evident and along the lines of dorsocentrals. Apical scutellar bristles much shorter than the basal pair, most markedly so in the male.

Legs orange-yellow, mid and hind coxae and femora and basal halves of hind tibiae blackened. Posteroventral bristles on fore femora quite strong; apical ventral spur on mid tibia strong; hind tibia with a series of weak anterodorsal setulae.

Wing whitish hyaline, with black markings as Plate xi, figure 16. Inner cross-vein at a little more than its own length from outer; third vein setulose to inner cross-vein above; first vein setulose from just before apex of node to tip above, and at apex below. Halteres black.

Abdomen broadly ovate, glossy-black, with black hairs and bristles.

Length, 3-4 mm.

Type, male, Bulolo, New Guinea (F. H. Taylor); allotype, Papua: Ishurava, 3,000 feet, July 1933 (L. E. Cheesman); paratype, in poor condition, Wewak, New Guinea (F. H. Taylor).

#### CERATTIS McLeay.

*Zool. Journ.*, iv, 1829, 475.

This genus is represented by but one species in this region, the widely distributed Mediterranean Fruit Fly. It may be readily distinguished from all other genera of the family by the characteristic diamond-shaped apical palette on the anterior pair of supraorbital bristles of the male, the small black spots or short streaks in the centre of the cells of the basal half of the wing, and the dense stubble-like yellow bristles on the posteroventral and apical portion of the anteroventral surfaces of the fore femora of the male. The characters cited in the foregoing key to the genera will distinguish both sexes from other genera in this region, though they cannot invariably be successfully applied for the distinction of the genus in other regions.

#### CERATTIS CAPITATA (Wiedemann).

*Anal. Entomology*, 1824, 55 (*Trypeta*).

This species is distributed from Southern Europe through tropical portions of Africa and Asia as well as in the Hawaiian Islands, and tropical portions of Australia. It has been introduced in commerce in some other sections of the world, but has failed to establish itself permanently, notably in Florida. The lack of continuous supply of suitable fruits for the larvae prevents its being more than a passing menace except in strictly tropical countries.

In addition to the characters mentioned above, it may be worthy of note that the stubble-like postvertical and lateral bristles on the head and the setulose node of the first vein of the wing should be carefully considered as possible indices to a closer affinity with the Tephritinae than with the Trypetinae.

I have seen no specimens from this region.

I figure the characteristic anal cell of this species (Fig. J).

#### OEDASPOIDES Hendel.

*Wien. Ent. Zeitg.*, xlv, 1927, 63.

This genus is unknown to me, so that I have to depend upon Hendel's description for distinguishing data.

Despite the suggestive generic name the genus is apparently not very closely related to *Oedaspis* Loew, the frons in the latter being much broader and more convex, and the scutellum markedly convex and highly polished.

In his comparative data Hendel states that the third antennal segment is sharply angled at the upper apical corner, the sixth abdominal tergite of the female is shorter than the fifth, and the postocular cilia yellow and pointed. The wings have several dark fasciae as in *Oedaspis* and *Rhagoletis* Loew. In some respects the genus must resemble *Chrysotrypanea* described herein, but in the latter the third antennal segment is rounded at apex, and the orbitals are 3 + 2 instead of 2 + 2, and the postocular cilia stubble-like and pale yellow.

There are two species that Hendel places in *Oedaspoides*.

OEDASPOIDES ESCHERI (Bezzi).

*Boll. Lab. Zool. Portici*, v, 1911, 21 (*Oedaspis*).

Described from Sydney, N.S.W.

OEDASPOIDES ACUTICORNIS Hendel.

*Wien. Ent. Zeitg.*, xlv, 1927, 63.

Head pale yellow, with whitish dust on orbits, triangle, and face; bristles reddish-yellow, behind pale-yellow. Thorax black, humeri, suture, pleura over the fore coxae and in front of wing bases ochre-yellow, densely grey-dusted. Hairs pale yellow, the bristles reddish. Scutellum yellow, undusted, and at the bases of the two apical bristles black. Postnotum grey-dusted. Abdomen ochre-yellow, the bases of the tergites with dark fasciae, broader laterally, centrally interrupted on tergites 2 to 4. Genital cone as long as tergites 5 and 6 combined, glossy-black, with dark hairs, other abdominal hairs whitish-yellow. Legs and halteres yellow. Wings as in *escheri*; the hyaline fasciae are all narrower, not wider, than the brown ones, and there is no hyaline dot at apex of first vein.

Sydney, N.S.W.

CERATITELLA, n. gen.

*Generic characters*.—Quite similar in general appearance to *Ceratitis capitata*, but all the cephalic bristles and the postocular cilia are black, the anterior supra-orbital bristles in the male are simple, the fore femora in the same sex have only the normal bristles, the wings are not as wide at the anal angle, though the markings are quite similar, especially in the basal cells, the lobe of the anal cell is much as in the other genus but not as markedly sinuate, there is no outstanding costal bristle at the apex of the subcostal vein, and the third antennal segment is rather noticeably sharpened at the upper apex. In this last character the genus appears to resemble *Oedaspoides*, as well as in the swollen and black and yellow scutellum, but the black postocular cilia and the black dotted and streaked basal portion of the wing are different from that of Hendel's genus.

Genotype, *Ceratitella loranthi* (Froggatt).

CERATITELLA LORANTHI (Froggatt).

PROC. LINN. SOC. N.S.W., xxxv, 1911, 863 (*Ceratitis*).

♂. Head orange to brownish-yellow, with a lemon-yellow band across anterior fourth of frons, the face and anterior portion of genae yellowish-white, glossy, ocellar black spot small; antennae, aristae, palpi, and proboscis orange-yellow. All bristles, including the genal one, black, central minute hairs on frons and genal margins black, those on lower portion of back of head yellow. Orbitals 2 + 2, the upper reclinate pair much shorter than the lower and not longer than the moderately long ocellar pair; post-verticals shorter and finer than the latter, outer verticals about half as long as the inner pair. Width of frons at vertex about

two-thirds its length and two-fifths width of head, slightly widened in front. Face slightly concave in profile, epistome not protruded, centre flat, a slender fovea on each side most evident below, lower margin transverse; eye vertical, about 1.25 times as high as long, longest at middle opposite antennal insertion, and about seven times as high as gena. Antennae extending to lower fifth of face, with noticeable apical upper point; arista subnude. Postocular cilia very short and setulose. Palpi spatulate; proboscis short and stout.

Thorax glossy black, the humeri, a large spot on each basal lateral angle of the scutellum, the posterior portion of the mesopleura above a line from near the spiracle to near the lower posterior angle, and most of the pleurotergite, lemon-yellow; disc of the mesonotum with dense yellowish-grey dust on two vittae from near anterior to near posterior margin, fused in front and behind, with a short lateral spur on anterior edge of the suture, and a short vitta laterad of the outer one behind the suture; hairs on the yellow parts and on dorsal vittae yellow, on other parts mainly black, all the bristles black. All bristles present, the dorsocentral and acrostichal pairs equally long, the former in line with the supra-alar pair; scutellum convex and thick, with four strong bristles, the basal pair in the yellow marks, the hairs fine and dark.

Legs entirely tawny-yellow. Fore femora with a series of black posteroventral bristles; hind tibia with a series of short anterodorsal black setulae on basal two-thirds or more.

Wing as Plate xi, figure 17, with black dots and streaks in cells on basal third and the veins blackened, a broad brownish-black fascia from the stigma to hind margin just in front of apex of anal vein, this connected on costa with a broad costal band of the same colour that extends to wing-tip, filling apex of first posterior cell, and very slightly notched below before apex and narrowly separated from the costal vein along parts of its extent, and a third dark fascia that emanates from the junction of the other two and extends obliquely to wing-margin over both cross-veins. Costal spine very inconspicuous; first vein setulose above from base of node to apex, and at apex below, third vein setulose from base to beyond inner cross-vein above and below, fifth vein bare. Two streaks from second vein to costa more intensely black than the other portions of the cell, may sometimes contain vestigial spur-veins. Anal cell as Figure K. Squamae white. Halteres yellow.

Abdomen shiny-tawny to orange-yellow, with black lateral marks on third and fifth tergites and the apices of second and fourth narrowly whitish-grey-dusted, hairs pale on the pale-dusted parts and base of second tergite, mainly black on other parts. Fifth tergite with an apical series of fine black bristles.

Length, 4 mm.

Sydney, N.S.W., bred from *Loranthus* sp., Dec. 1938 (L. R. Clark).

#### ORTALOPTERA Edwards.

*Trans. Zool. Soc. Lond.*, xx, Pt. 13, 1915, 419.

This genus is a peculiar one, with characters that make it difficult to associate it with either Trypetidae or Phyalmiidae, though the cephalic and wing characters strongly suggest the latter relationship. There are two pairs of orbitals, the supra-orbital pair strong and reflexed, the infraorbital pair short, weak, and incurved. The arista is long haired. The thorax lacks the humeral, presutural, prescutellar, and propleural bristles, and has the scapular, notopleural, supra-alar, and mesopleural bristles strong, and the pteropleural and sternopleural bristles weak but

distinct. Scutellars four. Edwards states that the genotype has a preapical bristle on the mid tibia, a character he states, erroneously, occurs also in *Rioxa formosipennis* Walker. I have never seen a species of Trypetidae with a preapical dorsal bristle on any tibia. The wing-veins are bare, another very exceptional character, the second vein is undulated, and the anal cell is longer than the free part of the anal vein, without an apical lobe, though longest on its lower edge, the vein closing the cell slightly arcuate, and the inner cross-vein is far before the middle of the discal cell.

ORTALOPTERA CLEITAMINA Edwards.

Op. cit., xx, Pt. 13, 1915, 420.

This species is quite similar to certain species of the genus *Cleitamia*, notably in the wing markings. General colour uniformly dull-black, the head dull light-ochreous-brown, with some darker mottling on the vertex, antennae and palpi ochreous, third segment of former darker at apex. Legs blackish-brown, fore femora, apices of mid tibiae, and the greater part of mid and hind tarsi more reddish-brown. Wings dark brown, hyaline in costal, subcostal, posterior basal, and anal cells, on a narrow fascia at middle that runs straight to fifth vein and then curves apically, ending in hind margin below the outer cross-vein, a broadly arched streak as wide as the fascia that is separated by a brown interspace about its own width from the fascia, extending forward from fifth vein to second vein, then running along the hind side of that vein and ending in the apex of the first posterior cell, the anal angle also hyaline. Length, 10 mm.

Dutch New Guinea, Mimika River.

Subfamily TEPHRITINAE.

This group is usually distinguished from Trypetinae by the longer sixth abdominal tergite of the female, the yellow stubble-like postocular cilia, yellow postvertical, upper supraorbital, and outer vertical bristles, and the speckled wings, on which the setulae of the first vein commence at the base of the node on its upper surface. Frequently the pteropleural and posterior notopleural bristles are yellow, and usually the surface of the thoracic dorsum has flattened yellow scale-like bristles instead of fine hairs. The scutellum has never more than four bristles and often has but two, the apical pair being absent or much shorter than the basal pair. The dorsocentral pair of bristles are in most cases close to the suture, the arista is pubescent or bare, and the fifth vein is bare, while the third is rarely setulose to beyond the inner cross-vein above. In one or two genera I have included, the sixth abdominal tergite is not longer than the fifth. I include *Tephrella* and *Platensina* here though they are generally placed in Trypetinae.

Key to the Genera.

1. Head on lower margin in profile much longer than at bases of antennae; proboscis slender, chitinous, and geniculated at middle, without fleshy labellae, the apical section as long as head on lower margin ..... *Paroxyyna* Hendel
- Head not or very little longer on lower margin than at base of antennae in profile; proboscis stout, with fleshy apical labella ..... 2
2. Wing exceptionally broad, less than twice as long as wide, the widest point at outer cross-vein, the anal angle undeveloped (Pl. xi, fig. 21), ground colour brownish-black, with some small hyaline wedge-shaped marginal incisions, the extreme apex white, and sometimes some small hyaline dots in the field ..... *Platensina* Enderlein
- Wing either normal in width or slender, not less than twice as long as wide, widest point usually near middle of discal cell, the anal angle usually well developed, and not coloured and marked as above, or if but little more than twice as long as wide and the markings and ground colour as above, then there is no hyaline mark at the extreme tip ..... 3

3. Wing black or brownish-black, with whitish-hyaline incisions in the margin and at most four small hyaline dots in the field ..... 4  
 Wing hyaline, with black or brown marks, sometimes fasciate markings broken by numerous small hyaline dots, or yellowish-brown, with hyaline fasciae ..... 5
4. Wing more than 2.5 times as long as wide, the anal angle well developed; sixth abdominal tergite of female about 1.25 times as long as fifth; apex of wing with a white transverse streak ..... *Spathulina* Rondani  
 Wing not or very little more than twice as long as wide, without white mark at extreme tip; sixth abdominal tergite of female not longer than fifth ..... *Tephrella* Bezzi
5. Wing yellowish-brown, with hyaline markings, those on the disc consisting of three fasciae from hind margin to near the second vein, converging in front; inner cross-vein at or very close to middle of the discal cell; apical ventral spur on mid tibia not longer than apical diameter of the tibia .... *Chrysotrypanea*, n. gen.  
 Wing not marked as above; inner cross-vein much beyond middle of the discal cell; apical ventral spur of mid tibia much longer than apical diameter of the tibia ..... 6
6. Wing brown or brownish-black, with many small hyaline spots on entire area, the base largely hyaline, with a black spot at base of the anterior basal cell that extends over the fourth vein into the posterior basal cell; fore femur of male thicker than the other femora; genital cone of female circular in cross section; third antennal segment more than twice as long as wide, distinctly angulate at upper apical corner ..... *Camaromyia* Hendel  
 Wing brown, with hyaline spots or with an apical star-like dark mark, or marked with black along the costa and a black fascia from costa to hind margin over the cross-veins, never with a black spot at base of the anterior basal cell that extends over fourth vein into the posterior basal cell; fore femur in neither sex much thicker than others; genital cone of female usually flattened, oval in cross section; third antennal segment, if twice as long as wide, without upper apical angle ..... 7
7. Wing markings consisting of a large star-like mark on apical half or less from which emanate a few dark rays; scutellar bristles 2; infraorbitals 3 pairs ..... *Trypanea* Schrank  
 Wing markings not as above, not confined to apical half nor star-like; scutellar bristles 4, the apical pair sometimes short; infraorbitals 2 pairs ..... 8
8. Wing hyaline, with some brownish-black markings along the costa, a large mark at apex which usually encloses one or two hyaline dots, and a similarly coloured fascia from the costa to hind margin that encloses both the closely placed cross-veins ..... *Sphenella* Robineau-Desvoidy  
 Wing dark brown, with many indiscriminately arranged variably-sized hyaline spots on the entire area ..... *Tephritis* Latreille

## TEPHRELLA Bezzi.

*Mem. Ind. Mus.*, iii, 1913, 151.

This genus superficially resembles *Spheniscomyia* Bezzi in structure, colour, and wing markings, but may at once be distinguished from it by the presence of but two scutellar bristles, the yellow postvertical and outer vertical bristles and postocular cilia, the latter being stout, and stubble-like; the cross-vein closing the anal cell is either straight or very slightly angled at centre so that the lower posterior corner of the anal cell is not produced into a lobe.

I have recently described a species of this genus from the Solomon Islands, and have another from Western Australia that I provisionally refer here. They may be distinguished as below.

- A. Wing (Fig. L) black, the costal cell with three whitish-hyaline marks, one against the humeral cross-vein, a larger one before middle, and a narrower one near apex, three pairs of whitish-hyaline marginal incisions, one just beyond the apex of first vein, one in the second posterior cell, and one in the third posterior cell below middle of the discal cell, and three small hyaline discal spots, one in the first posterior cell beyond the outer cross-vein, one near apex, and another before middle of the discal cell; pleura and lateral margins of

mesonotum and scutellum brownish-yellow, remainder of thorax black; cross-vein closing the anal cell straight ..... *sexincisa* Malloch  
 A.A. Wing black, costal cell whitish-hyaline on basal half, the six whitish-hyaline incisions in the wing margin larger and longer than in *sexincisa*, the outer one in the second posterior cell curved and extending forward to a little over the third vein, the inner one to anterior extremity of the outer cross-vein, the pair in third posterior cell widely separated, the basal one extending across the discal cell near base, the other extending to fifth vein just before outer cross-vein; thorax black, propleura brownish-yellow; vein closing the anal cell slightly angled at middle ..... *australis*, n. sp.

TEPHRELLA AUSTRALIS, n. sp.

♀. Head testaceous-yellow, slightly yellowish-grey-dusted, the ocellar spot hardly darkened. Outer vertical, ocellar, and orbital bristles except the posterior supraorbital, dark brown. Frons slightly more than one-third of the head-width and about 1.25 times as long as wide, with three pairs of strong incurved infra-orbitals and two pairs of supraorbitals, the posterior the shorter, the anterior close to middle of frons; ocellars slightly behind the level of posterior edge of anterior ocellus. Antennae short, extending to lower third of face, third segment about twice as long as wide; arista pubescent. Gena not as high as width of third antennal segment.

Thorax shiny-black, grey-dusted, pleura more distinctly so, the propleura brownish-yellow, bristles brown, the scale-like mesonotal hairs pale yellow.

Legs yellow. Fore coxae each with a brown bristle near apex on anterior side; fore femur with a series of brown posteroventral bristles; mid tibia with an apical ventral brown bristle.

Wing brownish-black, whitish-hyaline at base to middle of costal cell and on basal half of edge in front of the anal vein, the other whitish-hyaline markings as in Plate xi, figure 18. Inner cross-vein at about its own length from apex of discal cell; second vein slightly bent in the dark part between the costal hyaline marks. Halteres yellow.

Abdomen glossy-black, abraded in type-specimen. Sixth tergite subequal to fifth; sheath of the ovipositor elongate-conical, the ovipositor slender, spine-like, yellow.

Length, 4 mm.

Type, Western Australia.

SPATHULINA Rondani.

*Dipt. Ital. Prodr.*, i, 1856, 113.

This genus is distinguished from its allies by the black wings with whitish-hyaline marks, one at the tip distinguishing it from *Tephrella* (Fig. M; Pl. xi, fig. 19). The pair of dorsocentral bristles are at the suture quite noticeably in front of the supra-alar line. Scutellars two.

SPATHULINA ACROLEUCA (Schiner).

*Reise Novara, Zool.*, ii, i abt., B. Diptera, 1868, 268 (*Tephritis*).

This species is rather variable in wing markings and has been described under several specific names. The distribution is very wide, from Africa through Asia to Australia, including Guam, Fiji, etc.

Efflatoun records *parcequittata* Becker, which is accepted as a synonym of this species, as having been reared from larvae feeding on *Ceruana pratensis* in Egypt, and states that the larvae are known to live on Composites in South Africa.



Shiraki, who records this species from Formosa, states that Schiner's type-specimen could not be found in his collection in Vienna, but there can be no doubt that his species is the one dealt with above, regardless of whether there may be some confusion in the matter of the relationship of forms described under different names from other regions.

I have specimens before me from Townsville, Queensland; Canberra, A.C.T. (F. H. Taylor).

The Canberra specimen has a hyaline dot near the apex of the discal cell of the wing.

#### CHRYSOTRYPANEA, n. gen.

*Generic characters.*—This genus is an aberrant one in this subfamily, the fasciate wings being like those of certain Trypetinae, though the yellow post-vertical, outer vertical, and posterior supraorbital bristles, and thick yellow postocular cilia clearly link it with the Tephritinae. Head higher than long, face slightly produced below; frons more than one-third of the head-width, and longer than wide, with hardly any central hairing, the orbitals 3 + 2, ocellars long, in line with the posterior edge of the anterior ocellus. Proboscis stout and short. Thorax with the normal bristles, the posterior notopleural yellowish-white and pteropleural stout and white, the other bristles black; basal scutellars long, apical pair microscopic. Legs rather stout, apical ventral bristle on mid tibia not longer than apical diameter of the tibia. Wing normal in shape, inner cross-vein at middle of discal cell, anal cell with triangular apical lower lobe; first vein setulose from base of node to tip above and at apex below (Fig. G2); third vein bare. Sixth abdominal tergite of female slightly shorter than fifth; sheath of ovipositor conical, circular in cross-section.

Genotype, *Chrysotrypanea trifasciata*, n. sp.

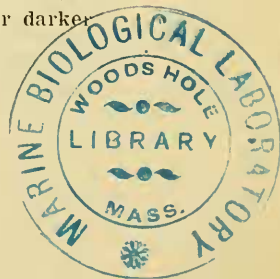
#### CHRYSOTRYPANEA TRIFASCIATA, n. sp.

♀. Head dull orange-yellow, frontal orbits grey-dusted. Antennae extending to lower third of face, third segment about 1.5 times as long as wide, rounded at apex, hairs on basal segment yellow, on second black; arista subnude. The three pairs of incurved infraorbital bristles equal in length, upper pair near middle, well in front of the anterior pair of supraorbitals, the latter close to upper third and about one-third longer than posterior pair. Gena about as high as width of third antennal segment.

Thorax brownish-yellow, mesonotum except narrowly on lateral margins, and the entire scutellum, glossy-black, lower part of pteropleura and the postnotum black, greyish-dusted. Mesonotum thickly covered with depressed yellow scale-like bristles. Metasternum bare.

Legs entirely yellow, hairs and bristles black, fore coxal bristles yellow. Fore femur with a complete posteroventral series of bristles; no hind tibial setulae.

Wings (Plate xi, fig. 20) yellowish-brown, with a rather faint broad subhyaline fascia from middle of costal cell to near hind margin and three narrow anteriorly convergent hyaline fasciae beyond it from hind margin to near second vein, the first from near apex of anal vein, ending in front of inner cross-vein, second between the cross-veins, the third from near upper apex of second posterior cell ending in submarginal cell above level of outer cross-vein; ground colour darker along the edges of the hyaline fasciae. Halteres yellow.



Abdomen glossy-black above, including the sheath of ovipositor, yellow below, the dorsum with similar yellow scale-like armature to the mesonotum. Bristles yellow.

Length, 3.5 mm.

Type, Seaford, Victoria, from gall on Dogwood.

#### PLATENSINA Enderlein.

*Zool. Jahrb.*, xxxi, Abtl. Syst. Geog. und Biologie, 1911, 453; Hendel, *Ann. Mus. Nat. Hung.*, xiii, 1915, 461; Curran, *Proc. Cal. Acad. Sci.*, xxii, No. 1, 1936, 29.

This genus was originally erected for the reception of a new species, *sumbana* Enderlein. Subsequently Hendel included six old and two additional new species in the genus. Whether these are all distinct species is a matter of considerable doubt as the general features of several of them are extremely similar. A comparison of the figures of the wings of the genotype, *platyptera* Hendel, and *malaita* Curran shows a remarkable resemblance in the shape and the markings, and examination of a series of specimens may reveal whether they are valid species or not. Each of the three species was described from a single female example.

The genus is distinguished from its allies by the broad wing, with the peculiar type of markings, and the two bristles at the apex of the subcostal vein.

There are two specimens in my present material, one of them a female very like *malaita* Curran, the other a male and quite distinct from that species in wing markings.

#### PLATENSINA PARVIPUNCTA, n. sp.

♂. Type specimen greasy, but apparently pale yellowish-brown or ferruginous in general colour, the mesonotum darker except on lateral margins, the abdomen glossy-black, yellowish at base; legs entirely brownish-yellow; wings dark brown, with the following hyaline marks: the cell basad of the humeral cross-vein, extreme base and a mark before middle of the costal cell, a narrow irregular streak from below the latter to apex of the anal cell, a transverse mark from the costa to second vein just beyond apex of first vein, two small triangles on hind margin, the basal one close to the tip of anal vein, and a narrow apical margin from just before apex of third to beyond apex of fourth vein. There is in the type specimen a slight short narrow hyaline mark along the edge of the second posterior cell just above the apex of the fifth vein.

Head in profile subquadrate, slightly higher behind, the frons a little longer than wide, three pairs of incurved infraorbital and two pairs of reclinate supra-orbital bristles, the upper one of the latter white and much shorter than the lower, inner verticals as usual much the longest on head, luteous, postverticals short, parallel and, like the postocular cilia, white, ocellars moderately long, brown. Face vertical, not visible in profile except at epistome, with slight antennal foveae separated by a raised line. Antennae a little more than half the length of face, third segment not twice as long as wide, rounded at apex, downy; arista very short haired; eye higher than long; gena about half as high as width of third antennal segment. Proboscis short and thick; palpi moderately wide.

Thoracic bristles, yellowish, as follows: 1 humeral, 2 notopleurals, 1 pair of dorsocentrals in line with the supra-alars, 1 pair of prescutellar acrostichals, 1 presutural, 2 mesopleurals, 1 pteropleural, 1 sternopleural, 2 long basal and 2 short apical scutellars. There are about four quite strong erect setulae or bristles in a series on the propleura.

Legs slender, fore femur with a few rather long bristles on the postero-ventral surface, mid tibia with one long apical ventral spur.

Wing as in Plate xi, figure 21. The usual two bristles at the apex of the subcostal vein, first vein setulose to apex, third with a few microscopic hairs at base above and below.

Abdomen narrowly ovate, fifth tergite longer than fourth, with a few bristles apically on sides. Hypopygium small.

Length, 5 mm.

Type, Cairns, N. Queensland (Illingworth).

PLATENSINA DUBIA, n. sp.

♀. Very similar to *malaita* Curran, the bristling of the frons as in *parvipuncta*; there is a small dark-brown mark between each antenna and eye not mentioned by Curran in his description, and the third antennal segment is quite broadly rounded at apex. Thorax brownish-yellow, mesonotum black except on lateral margins and densely grey-dusted. Bristles as in *parvipuncta*, the apical scutellars about half as long as the basal pair. Legs as in *parvipuncta*. Wing: Costal cell with a hyaline spot before middle and another near apex as in *malaita*, but the stigma has a much narrower hyaline mark at base than in that species, and the hyaline spot near the base of the first posterior cell is much smaller than in *malaita* or *sumbana*. Abdomen glossy-black, without grey-dusting on any part of the dorsum, genital cone as long as the three preceding tergites combined.

Length, 5 mm.

Type, Gordonvale, N. Queensland, in scrub (Illingworth).

One wing of the type-specimen is much damaged.

I take this opportunity to draw attention to the similarity between the genera *Platensina* and *Protephritis* Shiraki. The author of the latter separated them in his key by a very slight difference in the position of the dorsocentral bristles. This difference is largely imaginary, and in fact it is my opinion that the character has been to some extent overemphasized in the classification of the family. In any event, both the genera, so far as my material shows, would fall in the same section of Shiraki's key. A very careful examination of the genotype of *Protephritis* (*Tephritis sauteri* Enderlein) reveals that the only character that might be utilized for its separation from typical *Platensina* is the narrower wing with, peculiarly enough, its wider anal region. The first vein is setulose at apex below, but it is so in *dubia* also, though not in *parvipuncta*, and though there are some setulae on the third vein below almost to the inner cross-vein there are traces of similar setulae on the third vein in *dubia* both above and below though the dark colour of the vein and membrane as well as the setulae makes them difficult to see. It requires no vivid imagination to discern, from the similarity of the wing markings, that both these generic concepts have had a common origin, and one may be pardoned for accepting them as but subgenera. Of course the same attitude may be adopted with regard to several other concepts in the same subfamily, many of them being founded upon quite nebulous characters.

SPHENELLA Robineau-Desvoidy.

*Mém. présentés Ac. Roy. Sci. Inst. France*, ii, 1830, 773, Essai Myodaires.

This genus contains three palaeartic species, and one is recorded from Formosa. Three species occur in Africa, one of them the genotype, which I have also from Australia.

SPHENELLA MARGINATA (Fallen).

*Ortalides Sueciae* (1) 1820, 7 (*Tephritis*).—*Trypeta heterura* Thomson, *Eug. Resu.* ii, Zool. i. Insecta, 1868, 584.

A small dark species with dense grey-dusting on the thorax and abdomen, the legs tawny-yellow, the wings (Pl. xi, fig. 22) hyaline, with some marks along costal margin up to the apex of the stigma brownish, the stigma darkest, a rather narrow fascia from the costa to the hind margin enclosing both the cross-veins, and an irregular marginal band from before apex of second vein round the wing margin to beyond apex of fourth vein, black; there are also two faint dark spots on the fifth vein about middle of the discal cell and one about middle of the anal vein (Fig. N). The arista is almost bare, the third antennal segment reaches almost to the slightly produced epistome and is slightly angulate at apex above, the frons has two pairs of incurved infraorbitals and two pairs of reclinate supraorbitals, the uppermost one of the latter short and pale yellow, the ocellars are long and dark, the inner verticals are the longest bristles on the head and are dark while the much shorter outer verticals, the parallel postverticals, and the postocular cilia are yellowish-white. The dorsocentral bristles are almost in transverse line with the supra-alar bristles, the presutural is present, as are also one mesopleural and one sternopleural; the pteropleura has one or two long stiff outstanding setulae; scutellum more or less yellowish and with four subequal black bristles. The cross-veins of the wing are rather closely placed, separated by about the length of the inner one.

Length, 3-4 mm.

Tallong and Scone, N.S.W.; Canberra, A.C.T. (F. H. Taylor). This European species occurs also in Africa and the Canary Islands. I have seen one specimen that is evidently this species from Tonga.

The larvae feed on various species of *Senecio*, *Centaurea*, and *Picris*.

I believe this is *Urophora ruficeps* Mcq., *Dipt. Exot.*, Suppl. 4, 1850, p. 288.

#### CAMAROMYIA Hendel.

*Wien. Ent. Zeitg.*, xxxiii, 1914, 95.—Malloch, *Dipt. Patag. and S. Chile*, Pt. vi, fasc. 4, 1933, 273.

This genus was erected for the reception of a widely distributed species, *bullans* Wiedemann, but several additional species from Africa and South America have since been placed in it.

#### CAMAROMYIA BULLANS (Wiedemann).

*Trypeta bullans* Wiedemann, *Aussereur. Zweifl. Ins.*, ii, 1830, 506.—*Tephritis tenera* Loew, *Zeitschr. ges. Naturw.*, 1869, 8.—*Acinia rufa* Macquart, *Dipt. Exot.*, ii, Pt. 3, 1843, 228.—*Tephritis meleagris* Schiner, *Reise Novara*, Zool. ii, i abt., B. Diptera, 1868, 272.—*Tephritis adspersa* Coquillett, *Invert. Pac.*, p. 30 (1904).—*Camaromyia bullans* Hendel, *Wien. Ent. Zeit.*, xxxiii, 1914, 95; *Abh. Ber. K. Zool. Mus. Dresden*, xiv, 1914, 63.—*Tephritis wolffi* Cresson, *Ent. News*, xlii, 1931, 5.

In this species the scutellum has the apical pair of bristles about half as long as the basal pair, the antennae of the male are dark brown to fuscous in colour, with the apex of the second segment and base of the third yellow, and in the female they are entirely yellow, with the arista in both sexes thickened to near the middle, yellow at extreme base, white to near middle, the apical portion dark brown. The genital cone in the female is glossy-black, cylindrical, and tapered to apex. Rarely in general specimens or in those that have been damaged this cone may be flattened through pressure, so that care should be exercised to determine on the basis of other characters where such specimens fall in the generic key. The wing is marked as shown in Plate xi, figure 23.

Illawarra and Botany Bay, N.S.W.; Brisbane, Queensland. The distribution in the New World extends from the southern United States to Patagonia, and in

the Old World throughout most of the Palaearctic Region except Japan, and in Australia. Possibly it may yet be found in intermediate points in the latter.

TEPHRITIS Latreille.

*Nouv. Dict. Hist. Nat.*, xxiv (Tab.), 1804, 196.

This genus, as accepted here, has the wings brown, with many small hyaline marks or spots indiscriminately arranged in the cells on almost the entire field, the frons with but two pairs of infraorbital bristles, and the proboscis quite thick and short.

There is but one species before me from this region which I re-describe below.\*

TEPHRITIS PELIA Schiner.

*Reise Novara, Zool.*, ii, i abt., B. Diptera, 1868, 271.

♂, ♀. Very similar to *plebeia* Malloch from New Zealand, with two hyaline dots in the dark-brown stigma, and a hyaline spot at the apex of the first posterior cell of the wing, but the genae are much narrower, not more than one-sixth of the eye-height as against one-third in *plebeia*, there is no small hyaline spot in the dark patch in the marginal cell below the stigma, there is a yellowish patch on each side of the composite basal segment of the abdomen in the male that is not present in *plebeia*, and the genital cone of the female is bright orange or fulvous-yellow with a black tip, not entirely glossy-black.

Head testaceous-yellow, with greyish-white dust, most evident on the ocellar triangle, the frontal orbits and parafacials, occiput broadly black centrally, with grey dust; antennae, arista and palpi yellow, the palpi brownish apically; infra-orbital, anterior supraorbital, ocellar, and inner vertical bristles black, all others and the short hairs yellowish-white. Gena about one-sixth as high as eye, eye slightly oblique, higher than long; head in front about three-fourths as high as at occiput; epistome projecting. Frons about 1.25 times as long as wide, parallel-sided, and more than one-third of the head-width, all black bristles long and strong. Third antennal segment about 1.5 times as long as wide, angulate at upper apex; arista pubescent; palpi rather long and strap-like.

Thorax black, densely brownish-grey-dusted on dorsum and upper part of pleura, grey-dusted below, the humeri, posterior notopleural callosities, and scutellum more or less yellowish, a dark brown spot at insertion of each of the acrostichal and basal scutellar bristles, all the bristles except the pteropleural and scapulars black. Bristling complete, the apical pair of scutellars about half as long as the basal pair. Surface hairs pale yellow and decumbent.

Legs tawny-yellow. Fore tarsi longer than their tibiae, mid and hind pairs shorter; fore femur with the posteroventral series of bristles complete, hind pair with no anteroventral bristles.

Wings greyish-hyaline, with dark-brown markings (Pl. xi, fig. 24), the most distinctive being the bipunctate stigma, and the peculiar hyaline spot at the apices of the submarginal and first posterior cells. First vein setulose from base of node below the humeral cross-vein to apex and below on apical third, third vein with a few setulae at base above and sparsely setulose between base and inner cross-vein below. Halteres yellow.

Abdomen coloured as thorax, densely dark-grey-dusted, with faint traces of a pair of brown discal spots on tergites 3 to 5 inclusive, sides of composite basal tergite of male usually yellowish, hypopygium of that sex fulvous-yellow, the

\*I have been unable to find a species agreeing with the description of *Tephritis 11-guttata* Thomson.

genital cone of the female flattened, glossy-orange or fulvous-yellow, with black apex, broadest above. Hairs yellowish-white, bristles at apex of fifth tergite in male and sixth in female quite strong and black.

Length, 3.5-4 mm.

I am accepting as this species, which was originally described from Sydney, a number of specimens from Illawarra and Botany Bay (Peterson); Tallong, N. S. Wales; Canberra, A.C.T. (Taylor). This may be the species recorded by Macquart as *leontodontis* De Geer.

#### TRYPANEA Schrank.

Briefe Donaumoor, 1795, 147.—*Urellia* Robineau-Desvoidy, *Mém. présentés Ac. Roy. Sci. Inst. France*, ii, 1830, 775, Essai Myodaires.

This generic concept is a difficult one to maintain in cases where many species are available, as I have shown in my paper on the Patagonian Trypetidae. I am, however, segregating the single species now before me from Australia in *Trypanea* as an index to its closest affinities in the Old World fauna. The stellate dark apical wing-mark is quite characteristic in this species and is distinctive enough to warrant this procedure tentatively, though there is little in the line of structural features to justify the perpetuation of the segregation.

#### TRYPANEA GLAUCA (Thomson).

*Eugen. Resa*, ii, Zool. i. Insecta, 1868, 581 (*Trypeta*).

♂. Very similar in wing markings to *neodaphne* var. *gamma* Malloch from Patagonia, differing in the three incomplete branches of the brown mark over the first and second posterior cells of the wing (Pl. xi, fig. 25).\*

Head testaceous-yellow, with pale-grey dust, centre of occiput broadly black; antennae, arista, palpi, and proboscis yellow, second antennal segment with a small dark mark above. Head a little wider than thorax, in profile with the face almost vertical, epistome slightly protruded and about two-thirds as high as at occiput; eye oblique, at middle about two-thirds as high as its extreme length; gena fully half as high as width of third antennal segment, the latter about 1.5 times as long as wide, its upper apex angulate; arista subnude. Frons flat, about 1.25 times as long as wide, and almost parallel-sided, with three pairs of short fine yellowish infraorbitals, the other bristles rubbed off, but scars of four verticals and one pair of supraorbitals distinct.

Thorax black, densely whitish-grey-dusted, humeri and a spot below wing base yellowish. Most of the bristles rubbed off, but those remaining and the short hairs are yellow. Bristles as follows: 1 humeral, 2 notopleurals, 1 presutural, 1 supra-alar, 1 pair of dorsocentrals close to the suture, 1 pair of acrostichals, 2 postalar, 1 mesopleural, 1 sternopleural, 1 pteropleural, and a pair of scutellars near base.

Legs yellow. Fore tarsus shorter than its tibia, basal segment rather stout, in dorsal view about four times as long as wide, all the segments except fifth with a few long pale hairs on anterior edge, longest on basal segment; mid and hind tarsi slender, longer than their tibiae, basal segment much more than four times as long as wide.

Wing milky, veins yellow, dark brown in the dark markings. First vein setulose from base of node to apex above and on apical half below, third vein with a few setulae at base above and below. Halteres yellow.

\* The tiny dots on the photograph are dirt, the three irregular patches on the fifth vein are pieces of wing membrane.—F.H.T.

Abdomen coloured as thorax, immaculate, with yellow bristles and hairs. Tergites subequal in length, with some lateral bristles on fifth.

Length, 3 mm.

Waterfall, N.S.W. (H. Peterson). This and other specimens from the same collector sent me by the late C. F. Baker in general sweepings. Type locality, Sydney.

#### PAROXYNA Hendel.

*Flieg. Palear. Reg.*, in Lindner, xlix, Trypetidae, 1927, 146.

There are a large number of Old World species of this genus, but there is only one known to me from the Australian region.

#### PAROXYNA SORORCULA (Wiedemann).

*Aussereur. Zweifl. Ins.*, ii, 1830, 509 (*Trypeta*).

A very small species characterized by the long head, slender geniculated proboscis, and slender hyaline wings with numerous small fuscous marks (Pl. xi, fig. 26).

It is recorded from many tropical and subtropical countries in the Eastern and Western Hemispheres, extending in the latter into the Patagonian region, though in the Old World confined to the warmer section. It has been described under several specific names in three genera.

I have four specimens from Tambourine Mt., Queensland (C. Deane).

Recorded from Fiji by Bezzi, and possibly occurs rather generally throughout this region, though its small size may be responsible for its being overlooked by most collectors.

Shiraki, in dealing with the Formosan Trypetidae, retained the species in the genus *Ensina* Robineau-Desvoidy despite Hendel's having placed it in *Paroxyrna*.

#### Subfamily SCHISTOPTERINAE.

This subfamily, as I accept it, contains five genera, only one of them occurring in the region now under consideration, the others being African.

The distinguishing character consists of a deep cleft in the costal margin of the wing at the apex of the subcostal vein, the apex of the section of the costa in front of the cleft sharply angulate and with a pair of bristles that are usually quite strong and conspicuous.

Bezzi distinguished two subfamilies in the group, segregating Schistopterinae from Rhabdochaetinae by the fact that in the former there are no strong bristles on the interfrontalia in front of the ocelli, while in the other group, to which the sole representative we have to consider belongs, there are at least two strong erect bristles in front of the ocelli, usually convergent and slightly forwardly directed at their apices.

This same combination of cleft costa and interfrontal bristles is met with in some other families, notably in the Milichiidae.

#### RHABDOCHAETA de Meijere.

*Bijd. Dierk.*, 17-18 Af., 1904, 109.

There are seven described species of this genus known to me, but only one is from this region.

#### RHABDOCHAETA CROCKERI Curran.

*Proc. Cal. Acad. Sci.*, xxii, No. 1, 1936, 28.

Described from the Solomon Islands and not known from elsewhere, though it may be expected to occur on adjacent island groups.

*Unidentified Species from New Guinea.*

*Ptilona bischoffi* Kertész, *Term. Fuzet.*, xxiv, 1901, 427.—Bezzi says this is not a *Ptilona*.

*Sophira bistriga* Walker, *Jour. Proc. Linn. Soc. London.* iv, 1860, 160.—See under *Colobostrella ruficauda* Hendel, in text.

*Trypeta brevitta* Walker, op. cit., viii, 1865, 124.—Genus doubtful.

*Ptilona lateralis* Kertész, *Term. Fuzet.*, xxiv, 1901, 428.—A *Rioxa* according to Bezzi.

*Trypeta indistincta* de Meijere, *Nor. Guin.*, ix, Zool. livr. iii, 1913, 364.—Genus ?.

*Acanthoneura sexguttata* de Meijere, *Nor. Guin.*, ix, Zool. livr. iii, 1913, 364.

*Acanthoneura debeauforti* de Meijere, op. cit., v, 1906, 94 (*Rioxa*).

*Acanthoneura insignis* de Meijere, op. cit., ix, Zool. livr. iii, 1913, 366.—See under *Pseudacanthoneura septemnotata*, n. sp. in text.

*Rioxa* (?) *nivistriga* Walker, *Journ. Proc. Linn. Soc. Lond.*, v, 1861, 246 (*Helomyza*).

*Themaroides* (?) *optatura* Walker, op. cit., viii, 1865, 116 (*Helomyza*).—Czerny has said this is the female of *quadrifera* Walker.

"*Helomyza*" *ortaloides* Walker, op. cit., viii, 1865, 116.—A Trypetid.

*Dacus speculifera* Walker, op. cit., viii, 1865, 122.—A *Callistomyia* ? according to Bezzi.

*Ptilona variabilis* Kertész, *Term. Fuzet.*, xxiv, 1901, 426.—Not a *Ptilona* according to Bezzi.

*Dacus biarcuatus* Walker, *Jour. Proc. Linn. Soc. London.* viii, 1865, 122.—Allied to *Callistomyia* according to Bezzi.

*Addendum, by F. H. Taylor.*

It has been suggested to me that a few remarks on the method adopted to make the photographs of the wings would be of service.

First of all the wing is taken off the fly with a sharp pointed pair of forceps and placed in absolute alcohol. It is then mounted direct into Euparal and weighted down with a small bottle of mercury, a half-dram vial serves the purpose, until the Euparal has set.

Any good type of projection lamp will serve as the illuminant for the camera. The lens should be of 3.5 cm. focal length; no eye-piece is used. The plate or cut film is "Process". It is a great mistake to use any other type of plate or film as it is essential to have complete control over the negative during development. The developer used is the "Kodak" process formula, Hydroquinone-Caustic Potash. The negative must not be overdeveloped.

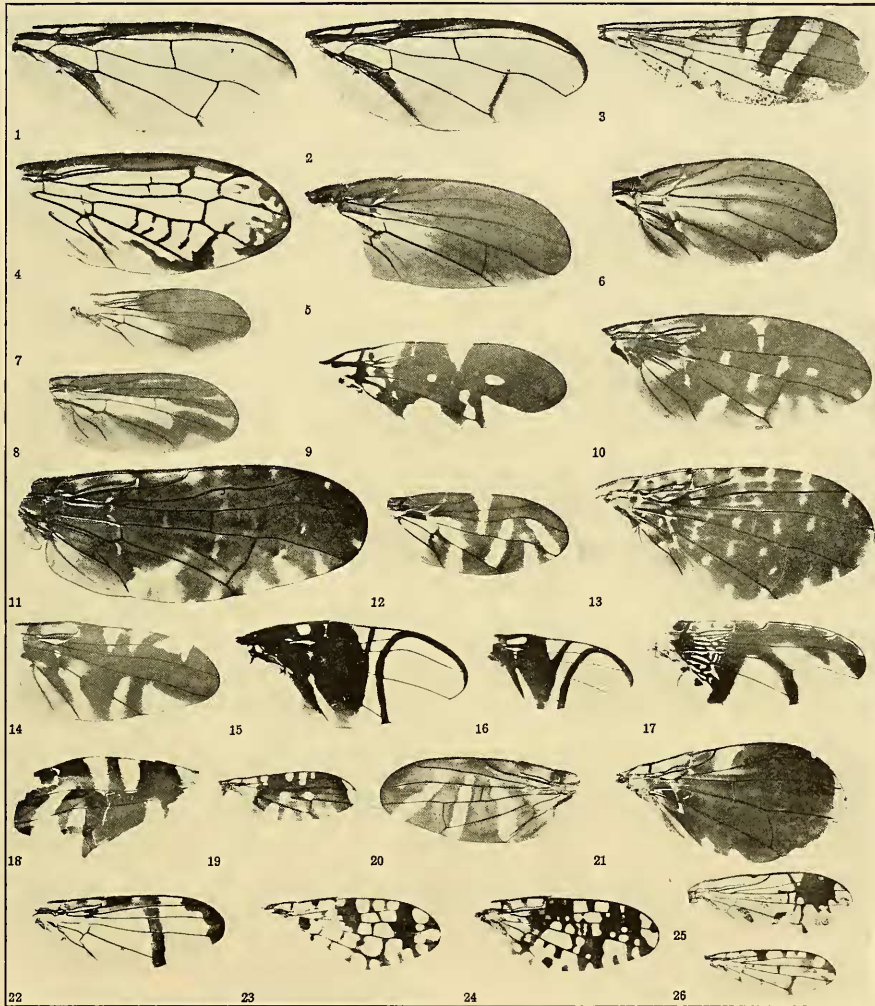
Wings showing a lot of "pattern" are comparatively easy to photograph, requiring from two to five seconds' exposure at f. 6.3. Wings which have very little or no "pattern" should have not more than one second exposure at the above lens stop, should be slightly underdeveloped and then intensified. The mercury-ammonia intensifier serves the purpose.

When the negatives are dry the background must be completely blocked out with "Opaque", using a fine sable-hair brush to go round the wing. A hand lens should be used to see that the "Opaque" does not encroach on the wing.

Any slow gaslight paper with a glossy surface will give excellent prints from negatives produced by the above means.

There is no necessity to retouch the wings in any way, as the veins stand out quite well.





New Guinea Trypetidae.